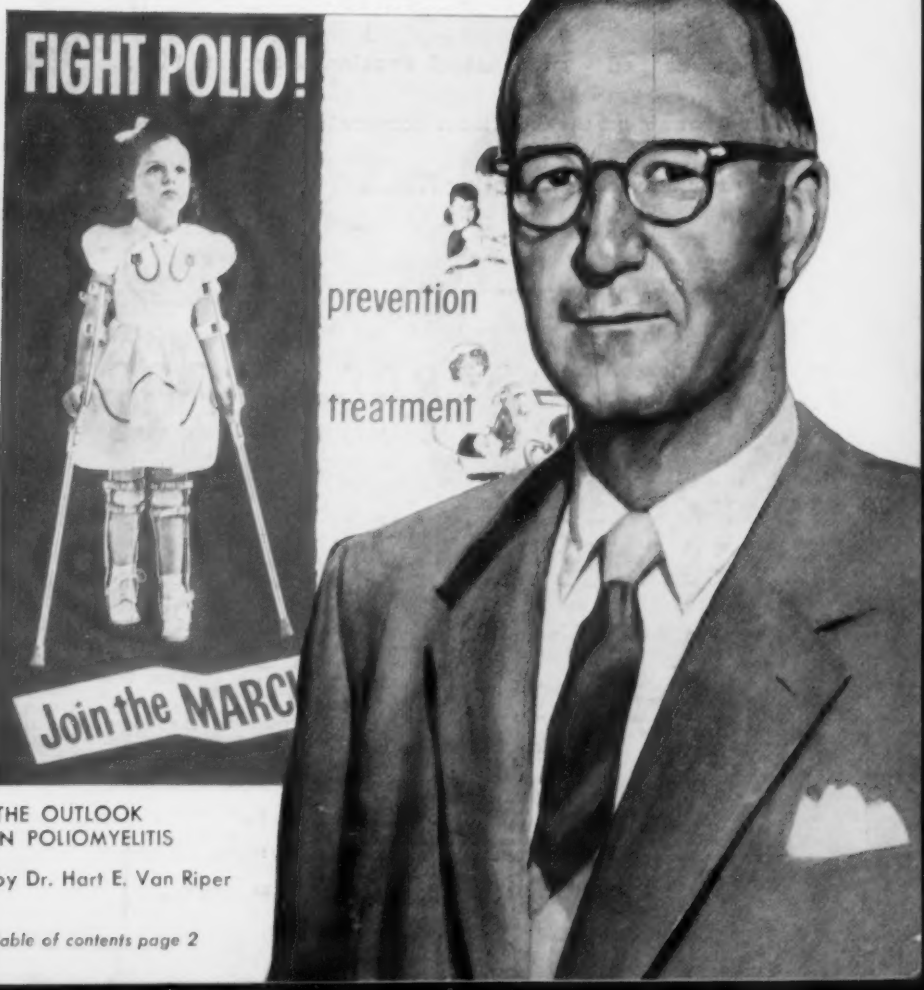
APRIL 1, 1955

# MODERN MEDICINE

The Journal of Diagnosis and Treatment




THE OUTLOOK IN POLIOMYELITIS

by Dr. Hart E. Van Riper

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(1) Johnston, R. L.: J. Ind. St. Med. Assn. 46:869, 1953
(2) McHardy, G. and Browne, D.: Sou. Med. J. 45:1139, 1952

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| Sodium Lauryl Sulfate . | 25 mg. |
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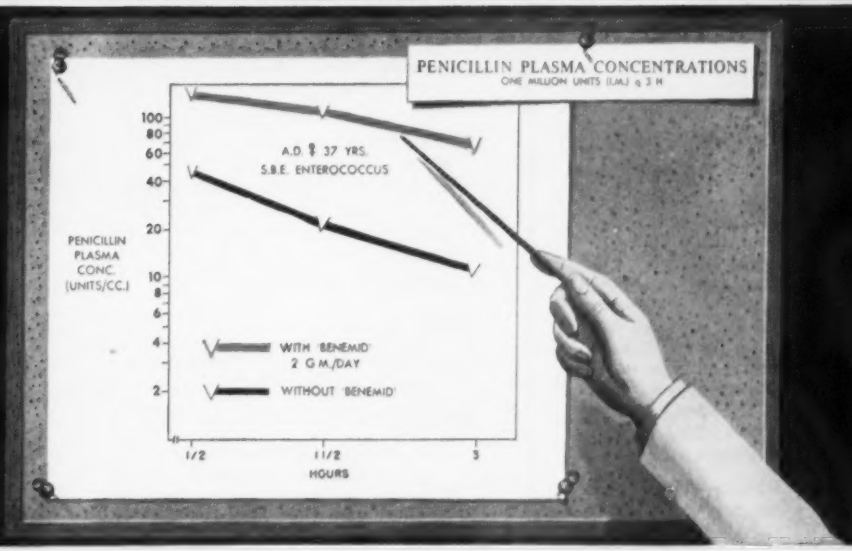
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**References:** 1. Antibiotics & Chemotherapy 2:555, 1952. 2. A.M.A. Exhibit, June 1951.



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•

THE MAN ON THE COVER is Dr. Hart E. Van Riper of New York City, Medical Director of the National Foundation for Infantile Paralysis. Dr. Van Riper is a diplomate of the American Board of Pediatrics, a fellow of the American Medical Association, and a member of the New York Academy of Medicine and the American Academy of Pediatrics. He was general chairman of the First International Poliomyelitis Conference. A special article by Dr. Van Riper, "The Outlook in Poliomyelitis," appears on page 75.



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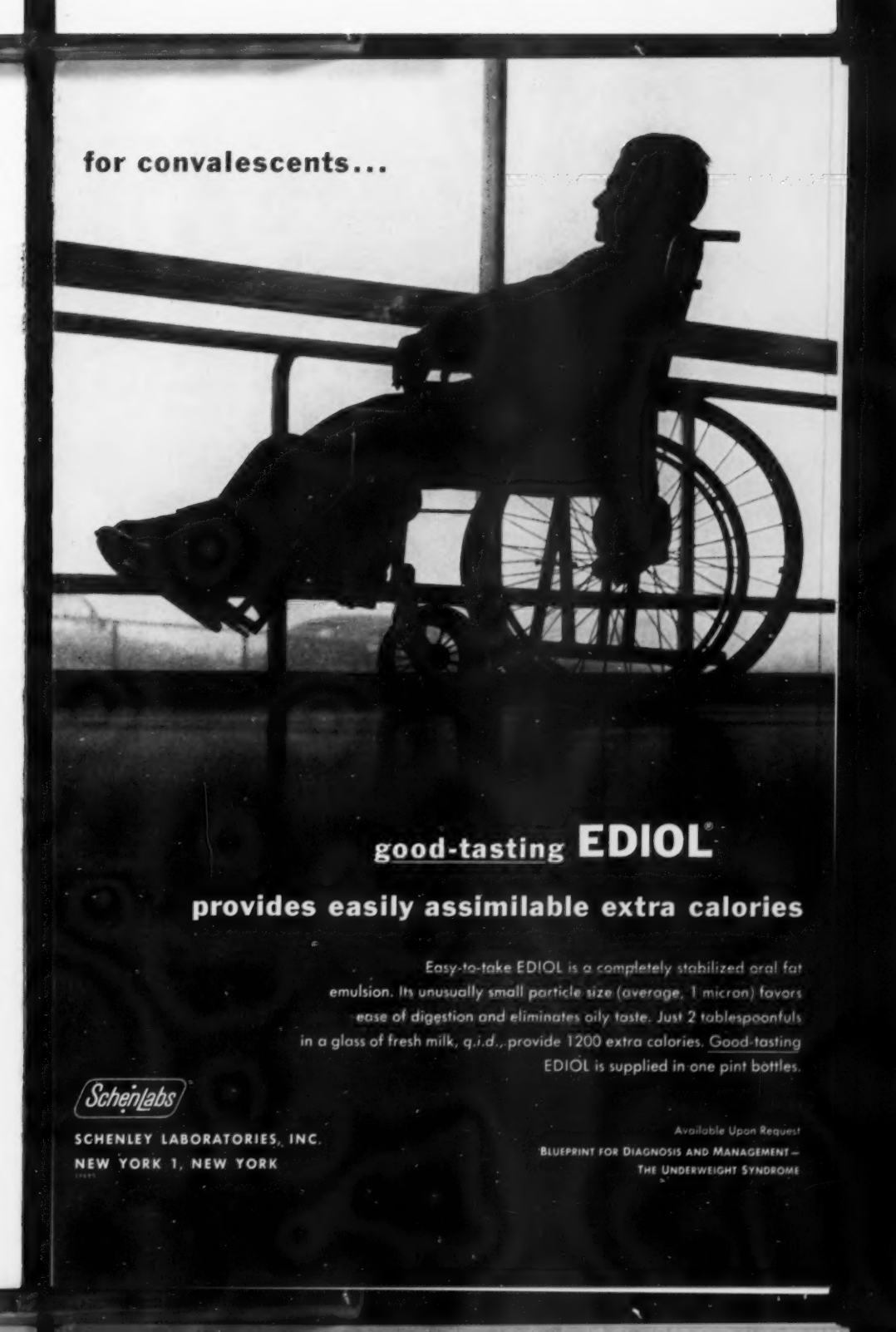
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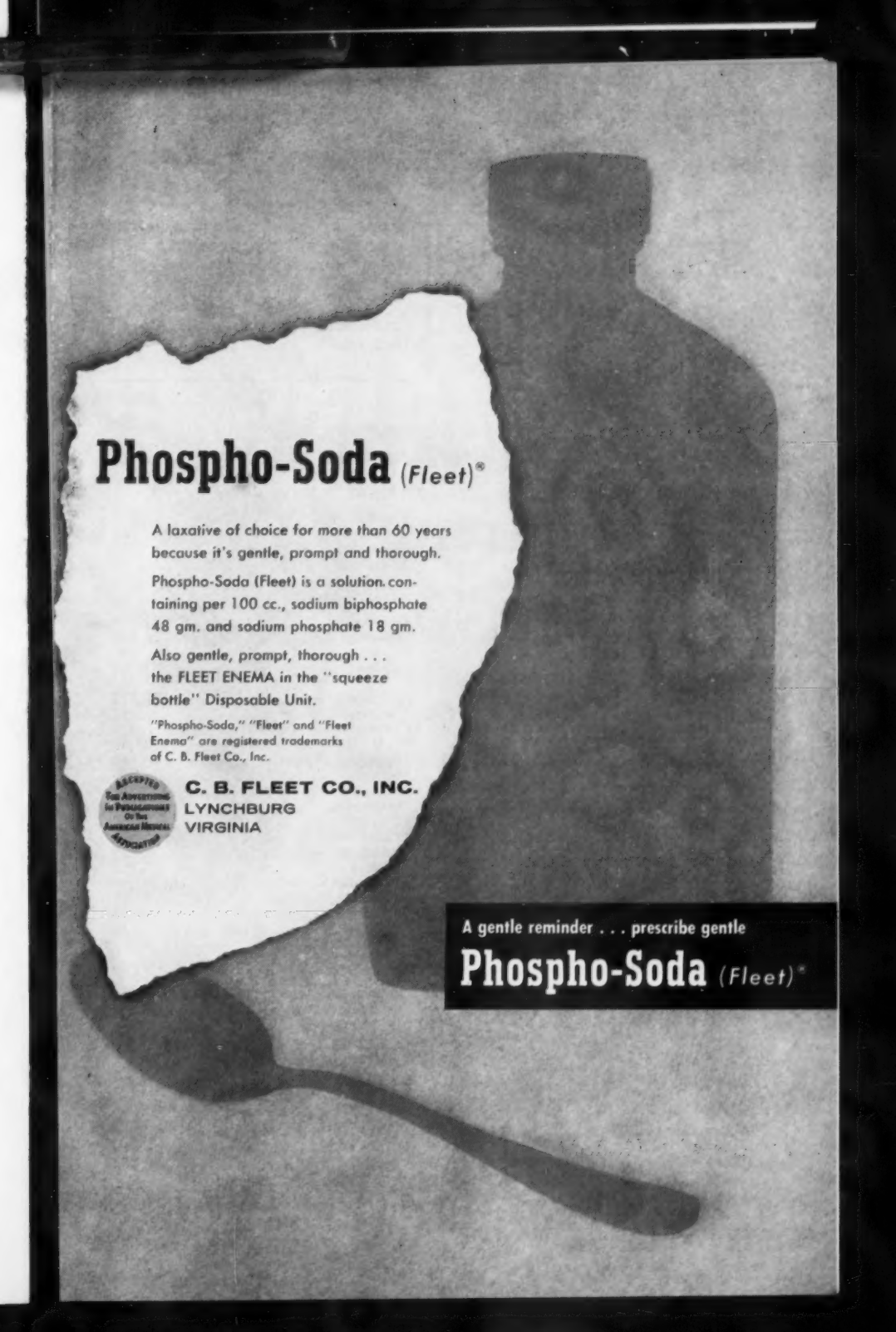
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# LETTER FROM THE EDITORS

*Dear Reader:*

At one time or another most of us have come across some bit of information that has caused us to think, "If only I had known this yesterday . . ."

We cannot eliminate occasions for such comment, but there are some things we can do to make the occasions much less frequent. One very big help is the regular reading of *Modern Medicine*. The editors try in every issue to anticipate the problems that you are going to face. They search the current literature for the best ways of meeting these problems. All too often the answers are incomplete, but at the very least they tell you what other physicians facing the same situations have done and how successful the solutions were.

At this very moment, work may be progressing in a laboratory somewhere that holds the answer to one of the problems you are going to encounter in your practice next month or next year. As soon as the answer is put in communicable form, it will be picked up by our coast-to-coast news reporting network of more than 50 physicians. Trained science writers will reduce the essential facts to a concise report, which will be hurried into press with the greatest rapidity consistent with accuracy.

The entire editorial organization of *Modern Medicine* is geared to fast action so that the lag between the discovery in the laboratory and implementation of the discovery in medical practice is reduced to the minimum.

It is for this reason that regular readers of *Modern Medicine* have fewer occasions than other physicians for murmuring, "If only I had known this yesterday."

*The Editors*

*a new dosage form*

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1. Armstrong, D. B., Dublin, L. I., Wheatley, G. M. and Marks, H. H.: Obesity and its Relation to Health and Disease, J.A.M.A. *147*:1007 (Nov. 10) 1951.

PHILADELPHIA 32, PENNSYLVANIA

# Correspondence

*Communications from the readers of* MODERN MEDICINE *are always welcome. Address communications to The Editors of* MODERN MEDICINE, *84 South 10th St., Minneapolis 3, Minn.*

## Value of Intermittent Dosage

TO THE EDITORS: On the Editor's Page (*Modern Medicine*, Jan. 1, 1955, p. 73), Dr. Alvarez indicates that it is advisable to administer intermittently drugs which tend to accumulate in the body. I subscribe fully to this principle.

An outstanding example of the usefulness of intermittent dosages is in the employment of the hypoprothrombinemia-inducing anticoagulant agents. Here accumulation may occur not only as a concentration of the drug in the body reservoirs but also as a physiologic effect. In persons with retarded restorative capacity of the liver, accumulation of physiologic effect may occur despite the fact that the body has already metabolized and disposed of the drug. An illustrative case is a patient who had been receiving ethyl biscoumacetate which generally is disposed of by the body within a few hours. The patient continued to exhibit marked prolongation of prothrombin time for nine days after the drug was withdrawn. This patient also showed hemorrhagic phenomena.

If the drug is eliminated by the body at a relatively slow rate and is administered daily at the dosage level necessary to maintain the prothrombin time at a therapeutic level but in excess of the rate of metabolism and disposal by the body, gradual accumulation occurs which may suddenly reach a concentration in the body great enough to extend the prothrombin time to a hazardous level and induce hemorrhage.

When intermittent doses are given, the body will have metabolized and commenced to dispose of the previous dose before the succeeding dose is administered. Since the curve of serial estimations of prothrombin time parallels the curve described by the rise and fall of



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the concentration of drug in the body, all the information needed to evaluate the status of the therapy can be obtained from observing the prothrombin-time curve. If the prothrombin time is rising, no further dosages should be given, but as soon as the prothrombin time has reached the peak of the curve and has commenced to decline, another dose is required. This intermittent method absolutely avoids accumulation of the drug in the body or prothrombin inhibition due to retarded restoration in the liver. At the same time, of course, it avoids bleeding.

Many clinicians do not employ anticoagulants because of the fear of hemorrhage. Obviously, the need is for a clearer understanding of how these drugs behave in the body and how to avoid accumulation, at the same time retaining therapeutic efficacy.

It should be pointed out that the only drugs suitable for intermittent administration are those which exert prolonged effects.

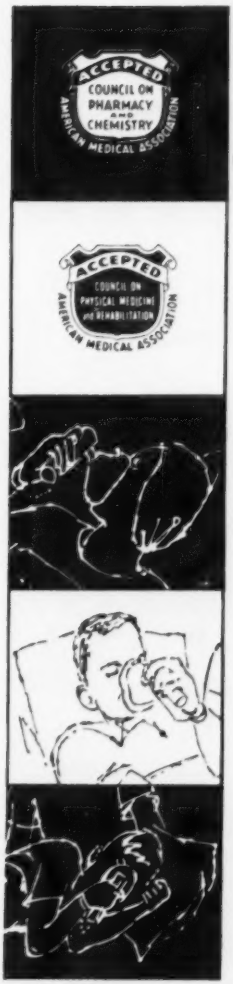
SHEPARD SHAPIRO, M.D.
New York City

## Really Threw a Curve

TO THE EDITORS: The Visiting M.D. in Diagnostix Case MM-277 says, "No claudication in the calves" (*Modern Medicine*, Dec. 15, 1954, p. 176). Claudication, from the Latin *claudicatio*, means limping. In other words, no limping in the calves. The Visiting M.D. really threw the Attending M.D. a curve. Perhaps the patient was a farmer on the side.

O. L. DAWSON, M.D.
St. Joseph, Mo.

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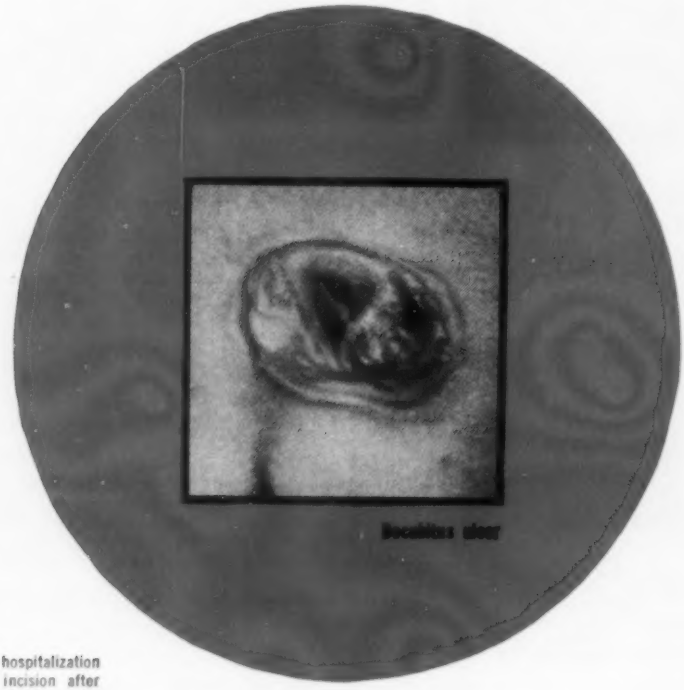
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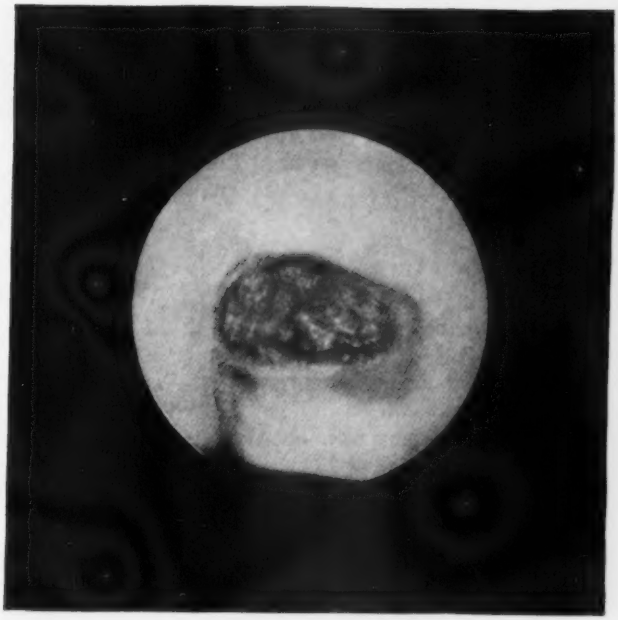
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Ophthalmic disorders
iritis
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IMPORTANT CLINICAL REPORTS:

Innerfield, I., *Trypsin Given Intramuscularly in Chronic, Recurrent Thrombophlebitis, J.A.M.A.*, 156:1056-1058 (Nov. 13) 1954.

Golden, H., *Intramuscular Trypsin, Its Effect in 83 Patients with Acute Inflammatory Disorders, Del. State Med. J.*, 26:267-270 (Oct.) 1954.

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# Forensic Medicine

ARTHUR L. H. STREET, LL.B.

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## Compensation—*Illness Cause*

PROBLEM: An employee sustained a pneumonia attack the day after he worked in a steamship hold and died a few days later. Was a federal workmen's compensation award due because a physician believed that the disease was caused by the employee becoming overheated in the hold and then suddenly chilled, though the pneumonia could probably be attributed to the activities of the employee after work?

COURT'S ANSWER: *No.*

So decided the United States Court of Appeals, Fifth Circuit (89 Fed. 2d 956).

## Double Indemnity—*Liability*

PROBLEM: Novocain was administered before tonsillectomy to a doctor in good health except for diseased tonsils. The doctor was hypersensitive to the drug and died from resulting paralysis of the respiratory center. Was his widow entitled to collect double indemnity under a life policy that excluded liability for death due to physical disease?

COURT'S ANSWER: *Yes.*

The United States Circuit Court of Appeals, Fourth Circuit, decided that undisputed medical testimony proved that the idiosyncrasy was not a disease (11 Fed. 2d 486).



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## Hospitals—*Injured Intern*

**PROBLEM: An intern serving at a hospital that carried workmen's compensation insurance was injured while assisting a physician in surgery when an anesthetic machine exploded. Was the intern's damage suit against the hospital properly dismissed on a theory that he was an employee, and therefore limited to a claim under the compensation act?**

COURT'S ANSWER: *Yes.*

The Illinois Appellate Court, First District, decided that since the intern's work was subject to detailed control by the hospital, he was an employee and not an independent contractor as is a physician who treats his patients in the hospital.

The court also said that his assistance to the surgeon was given on behalf of the hospital as part of the facilities furnished for surgery, so the intern could not be regarded as being an employee of the surgeon while assisting him (123 N.E. 2d 121).

## Malpractice—*Burden of Proof*

**PROBLEM: In a malpractice suit, the evidence was conflicting as to whether roentgen-ray burns were caused by overdosage or whether plaintiff was supersensitive to the rays. Did defendant doctor have to prove that plaintiff was hypersensitive and that his ignorance of the condition was not due to negligence?**

COURT'S ANSWER: *No.*

The Wisconsin Supreme Court upheld judgment in the favor of the physician (192 N.W. 38, 180 Wis. 207).

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## Trauma—*Cause of Paralysis*

**PROBLEM: Claimant in a workmen's compensation proceeding had bruised the left arm when he fell over an object on a sidewalk. Considerable evidence tended to refute a claim that the injury aggravated preexisting arteriosclerosis and indirectly caused the stroke that occurred thirteen days after the accident, resulting in partial paralysis of the left side. But an impartial medical witness testified that he believed the fall could have aggravated the disease. Did the testimony support an award of 50% permanent partial disability?**

COURT'S ANSWER: *Yes.*

The Kansas Supreme Court's decision was influenced by the fact that it was the function of the district court to weigh the evidence and it had approved the award (277 Pac. 2d 652).

## Company Hospital—*Liability*

**PROBLEM: A railroad hospital was supported and controlled by the company and the employees. The company was financially benefited through saving of expenses in physical examination of employees and treatment of injured workers. Were the hospital and the doctors agents of the company, so that the firm was liable under the Federal Employers' Liability Act for negligence in treating an employee whose death from heart disease was attributed to premature return to work after sick leave?**

COURT'S ANSWER: *Yes.*

The California District Court of Appeal, First District, differentiated the situation from one in which a company gratuitously provides medical care for workers. In the latter case he is not liable for the doctor's negligence (277 Pac. 2d 444).

CIBA
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## Electricity—*Cause of Death*

**PROBLEM: Death of an automotive mechanic while at work was attributed to cerebral hemorrhage. Could a workmen's compensation award be made on a theory that electricity passed through a defective welding machine to a wrench that the employee was holding, through the blood stream via the brain, and out through the other hand resting on a metal fender?**

COURT'S ANSWER: *No.*

The Louisiana Court of Appeal, Second Circuit, noted that proof of death from cerebral hemorrhage while at work does not show that it was caused by the employment. The court decided that death by electrical shock passing along the blood stream through the brain was not a tenable theory according to medical testimony.

Though Jellinek, an authority on electricity, reported in 1903 that the blood does transport electricity, the court was influenced by the following testimony: The present-day theory is that electric current follows a direct line between two poles and that current transmitted between forearms does not traverse the brain (76 So. 2d 447).

## Pregnancy—*Child's Status*

**PROBLEM: Was a child born twenty-four days after the father was fatally injured one of his dependents in regards to workmen's compensation?**

COURT'S ANSWER: *Yes.*

So decided the Michigan Supreme Court (67 N.W. 2d 133).


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*Lehrer, H. W. et al.: Ohio St. M. J. 47:44, 1951

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*infection*
*inflammation*
*injury*
*allergy*



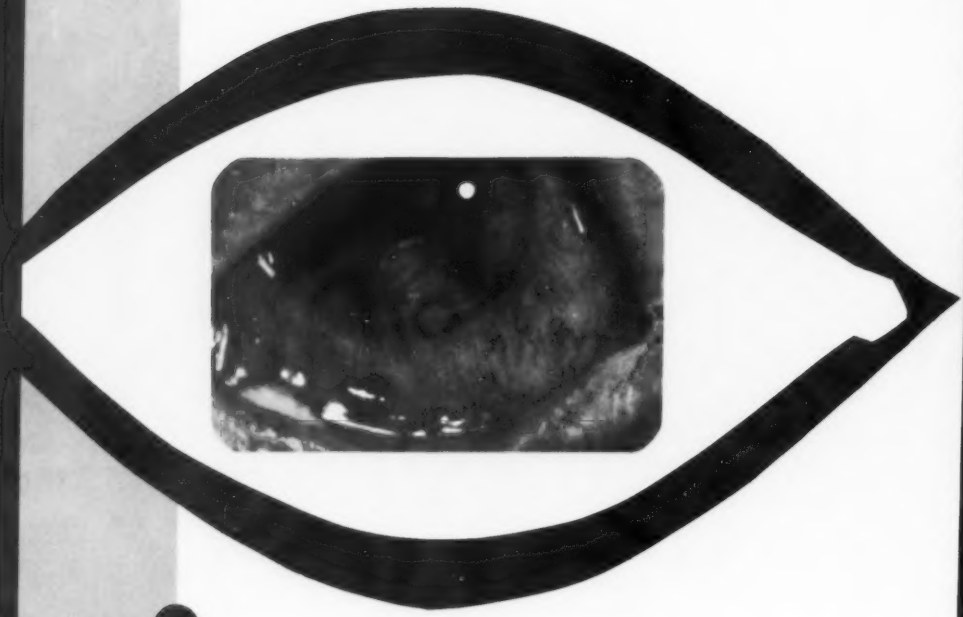

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# Questions & Answers

*All questions received will be answered by letter directed to the petitioner; questions chosen for publication will appear with the physician's name deleted. Address all inquiries to the Editorial Department,* MODERN MEDICINE, *84 South Tenth Street, Minneapolis 3, Minnesota.*

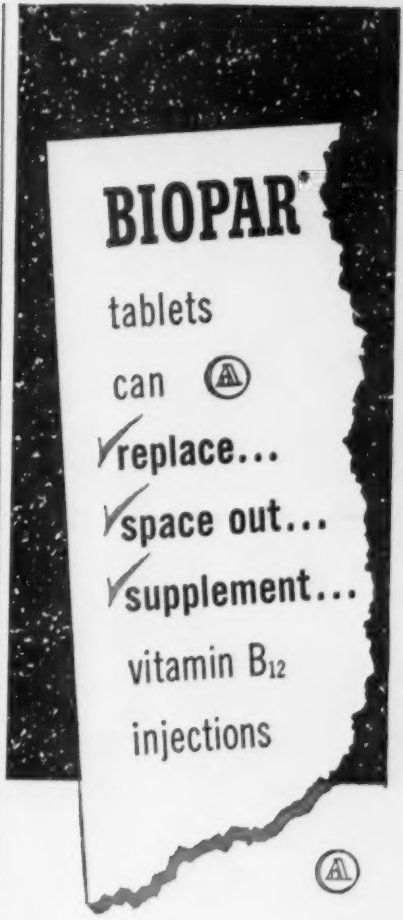
## Prevention of Prolapse

QUESTION: **A patient requiring a hysterectomy has some relaxation of uterine supports and slight cystocele. If the procedure is done from above, how would prolapse be prevented? Would sewing the vaginal cuff anteroposteriorly prevent prolapse? If the bladder is pushed down from the anterior vaginal wall and a long triangular wedge is cut out of the latter, would the cystocele be corrected?**

**M.D., New York**

ANSWER: *By Consultant in Gynecology.* The methods mentioned for supporting the vaginal vault are rational. I have used the anteroposterior closure of the cuff but not vaginal wedge, which may be difficult and injure the bladder.

Subsequent prolapse of the vaginal vault may be prevented by [1] placing angle stitches to secure the vaginal vault to the base of the broad ligament; [2] suturing the anterior and posterior cervical fascia including the uterosacral ligaments over the vaginal vault; [3] approximating the uterosacral ligaments and obliterating the cul-de-sac when enterocele exists; and [4] following the abdominal procedure with vaginal plastic correction of rectocele, cystocele, or both.


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## Cervical Cancer

**QUESTION: A 36-year-old woman has had menorrhagia for two months. Curettage and biopsy revealed areas of squamous metaplasia in the uterus without neoplasia. However, the cervix appeared normal. Cervical cautery was done and the uterus was packed for twelve hours. The pathologist reported squamous-cell carcinoma of the cervix, largely confined to the surface epithelium and invading the stroma with extension well into the endocervix and endocervical glands. How should this patient be treated?**

**M.D., Texas**

ANSWER: *By Consultant in Gynecology.* The most effective treatment is deep roentgen therapy and radium application. Therapy should be administered by a radiologist in cooperation with a gynecologist. Radical hysterectomy and pelvic gland resection may be done for early invasive carcinoma of the cervix, but only when performed by a gynecologic surgeon. Cauterization and packing should not affect the progress.

## Virus Vaccine

**QUESTION: Has virus material ever been recovered from the nose or throat of individuals inoculated with a virus antigen other than vaccinia?**

**M.D., New Jersey**

ANSWER: *By Consultant in Immunology.* Such reisolations would be expected only if the virus material inoculated contained active or liv-

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*Tainter, M. L., et al: Papain, Ann. New York Acad. Sc. 54:143-296 (May) 1951.



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# migraine...

# CAFERGOT®

*Ergotamine tartrate*
*1 mg.*
*with caffeine 100 mg.*

*Average Dosage: 2 to 6 tablets*
*at onset of the attack*

SANDOZ

*Sandoz*
*PHARMACEUTICALS*
*HANOVER, N. J.*

ing virus. At present, only two vaccines of attenuated but active virus are used routinely in man: vaccinia and yellow fever. Attenuated active viruses are used to produce a slight or subclinical infection which may give prolonged immunity. Inactivated or killed virus vaccines produce a resistance of short duration.

Vaccination by attenuated active virus involves an infectious process—the virus is expected to multiply and can often be reisolated. The area from which reisolation can be achieved depends on the virus involved and the site of inoculation. Viremia is known to occur with yellow fever and vaccinia inoculations. In the case of vaccinia, isolations from the nose and throat may represent accidental transfers from the original site of inoculation. By experiments on vaccination by oral administration of attenuated poliomyelitis virus, the agent has been recovered from specimens of feces. Reisolations from the throat under these conditions might be expected.

## Perchloroethylene Toxicity

QUESTION: **Is constant inhalation of perchloroethylene fumes harmful?**
**M.D., Pennsylvania**

ANSWER: *By Consultant in Pharmacology.* Perchloroethylene inhalation may produce gastrointestinal disturbances and liver degeneration.

This cleaning solvent is less toxic than carbon tetrachloride, but 1 case of fatal poisoning from the agent has been reported.

news! IMPORTANT PRICE REDUCTION

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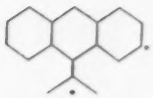
prices reduced 18%

The rapidly expanding routine use of Furadantin in acute and chronic urinary tract infections has enabled us to make an average reduction of 18% in the cost to your patients.

50 and 100 mg. tablets.
Furadantin Oral Suspension, 5 mg. per cc.

for true economy in urinary tract infections
FURADANTIN®
brand of nitrofurantoin, Eaton

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NORWICH, NEW YORK



*The expanding scope of a versatile new drug*

# THORAZINE*

'Thorazine' has achieved dramatic results in many major clinical applications:

In **nausea and vomiting,** 'Thorazine' has become established as specific for the prompt control of severe symptoms.

In **mental and emotional disturbances,** 'Thorazine' has rapidly become a standard therapy, often relieving conditions heretofore refractory to any pharmacological measures.

In the treatment of **pain,** 'Thorazine' has assumed an important role as a potentiator of analgesics, making it possible to use much smaller doses of narcotics or less potent narcotics.

In **hiccups,** the rapid effectiveness of 'Thorazine' therapy has made it the treatment of choice.

In **alcoholism,** the selective sedative action of 'Thorazine' has proved it invaluable in the management of psychomotor agitation and delirium tremens.

*It is indeed remarkable that so many of the early pharmacologic conjectures as to 'Thorazine' have so soon become established clinical realities. This is, of course, due to the widespread and intense medical interest in the drug, on which new articles are constantly appearing.*

'Thorazine' Hydrochloride is available in 10 mg., 25 mg., 50 mg. and 100 mg. tablets; 25 mg. (1 cc.) and 50 mg. (2 cc.) ampuls; and syrup (10 mg./5 cc.).

For information write

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*1530 Spring Garden Street, Philadelphia 1*

*Trademark for S.K.F.'s brand of chlorpromazine.

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first in advantages...

# digitaline nativelle®

**first** digitalis glycoside isolated (digitoxin)

**first** in world usage and favorable clinical reports

**first** with intravenous form and pediatric oral liquid

**first** color-coded tablets to avoid dosage error

**first** digitalis glycoside with specific intramuscular form—avoids irritation often encountered when intravenous preparations are administered intramuscularly

**first** with a complete range of interchangeable dosage forms to meet the patient's changing needs

Consult your Physicians' Desk Reference for dosage information.

Originators of the Cardiology Desk-Aid Series.
Send for complimentary set.

VARICK PHARMACAL COMPANY, INC.
(Division of E. Fougera & Co., Inc.)
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first in advantages
for low-salt therapy

# DIASAL®

salt substitute of choice

for congestive failure
essential hypertension
obesity
and whenever low salt is indicated

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|---|---|
| TASTE<br>POUR-QUALITY<br>APPEARANCE<br>STABILITY | help keep patients on low-sodium diets |
| FREEDOM FROM<br>UNPLEASANT<br>AFTERTASTE | Keeps food attractive—<br>prevents nutritional deficiencies |
| OPTIMAL<br>POTASSIUM<br>CHLORIDE<br>CONTENT | avoids borderline hypopotassemia—makes DIASAL<br>"...the product of choice for this purpose."* |

DIASAL contains only potassium chloride, glutamic acid and inert ingredients...no sodium, lithium, or ammonium...
and it is safe for prolonged use, both at the table and in cooking.

*packaging:* available in 2-ounce shakers and 8-ounce bottles. Send for liberal supplies of tasting samples and low-sodium diet sheets for your patients.

*Fremont, R. E.; Rimmerman, A. B., and Shaftel, H. E.: Postgrad. Med. *10*:216, 1951.

E. FOUGERA & CO., INC. 75 Varick St., N.Y. 13, N.Y.

# MEDICAL NOTES ... *from* ABROAD

## GERMANY

### Myocardial Lesions

Poliomyelitis is apparently often responsible for myocardial lesions.

Dr. Hannah Uflacker of Justus-Liebig University, Giessen, reports that electrocardiographic changes consistent with acute myocarditis were found in 21 of 62 children. In most cases the alterations appeared during the first two weeks of the disease. The most frequent changes were inverted or diphasic T waves, widening of the QRS complex, and depression of the S-T segment.

Normal electrocardiographic patterns usually return after several months.

Arch. Kinderh. (Stuttgart) 149:144-155, 1954.

### Transmission of Penicillin

Biologic and radioactive tracer studies indicate that penicillin passes easily through the placental barrier and reaches therapeutic concentrations in the fetal blood.

Dr. Hans-Wolfgang Kayser of the University of Kiel administered radioactive penicillin to 8 women in labor and compared maternal blood levels with those of the newborn infants. The penicillin levels of the placental and infantile blood were identical and amounted to about 50% of the concentration in the maternal blood. The fetal penicillin level, however, falls below the therapeutic range within four hours after administration of the drug to the mother.

Arch. Gynäk. (Munich) 185:140-149, 1954.

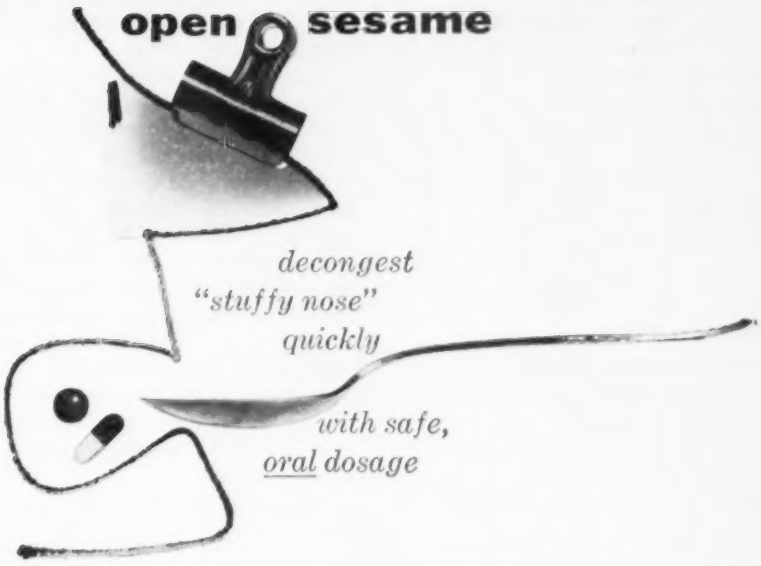
### Effects of Poliomyelitis

Psychic and emotional changes after poliomyelitis are apparently due to brain lesions rather than to mental strain. Drs. R. Ch. Behrend and Fr.-J. M. Winzenried of the University of Hamburg observed changes in behavior, affectivity, and cerebration in 57 of 703 patients after recovery from the disease. The most frequent alterations were irritability and inability to concentrate. Anxiety, restlessness, and depression alternating with motor and psychic excitement were also common. The changes could not be correlated with degree of physical crippling.

Nervenarzt (Berlin) 25:367-373, 1954.

### Susceptibility to Mumps

A complement-fixation reaction reveals whether an individual was ever infected with mumps virus. A negative result indicates absence of




# Novahistine®

**ELIXIR / TABLETS / FORTIS CAPSULES**

Oral use of this synergistic combination of vasoconstrictor and antihistamine takes the "sting" out of decongestion . . . eliminates risks of improperly used topical agents. And, Novahistine causes no jitters, insomnia, or drug tolerance.

Each Novahistine Tablet, or teaspoonful of Elixir, provides 5.0 mg. phenylephrine hydrochloride and 12.5 mg. prophenpyridamine maleate. In NOVAHISTINE *Fortis* Capsules the phenylephrine content is doubled, for patients needing greater vasoconstrictive effect.

PITMAN · MOORE COMPANY
DIVISION OF ALLIED LABORATORIES
INDIANAPOLIS, INDIANA

mumps antigens and susceptibility to the disease.

Using the V antigen, Dr. Ferdinand Müller of the Bernhard-Nocht Institute, Hamburg, found that 78% of children 5 years old and younger but only 18% of persons over 15 years of age are susceptible.

The test is reliable only in persons under 30 years of age.

Ztschr. Kinderh. (Berlin) 75:291-300, 1954.

## RUSSIA

### Vitamin C Deficiency

Gastrointestinal disturbances in infants and children often cause deficiencies in vitamin C, reports Dr. A. K. Kasymov of the Medical Institute, Tashkent. The degree of hypovitaminosis C varies with the severity and duration of the gastrointestinal disease and may range from clinically undetectable to scorbutic levels.

A study of the ascorbic acid content of the blood was made in 150 children under 3 years of age with dysentery, gastroenteritis, enterocolitis, and infantile dyspepsia. In severe cases, the ascorbic acid level of the blood dropped very quickly reaching levels as low as 0.12 mg. per 100 cc. of blood. Acute and chronic dysentery and chronic enterocolitis cause the most pronounced vitamin deficiencies.

Administration of vitamin C restores the normal blood content only when the underlying disease is also treated.

Pediatria (Moscow) 2:32-36, 1954.




Back on the
"Busy Bee" List

**FREE from PREMENSTRUAL TENSION**

When consultation reveals periodic nervousness, irritability, insomnia, headache, backache, abdominal bloating . . . consider premenstrual tension.

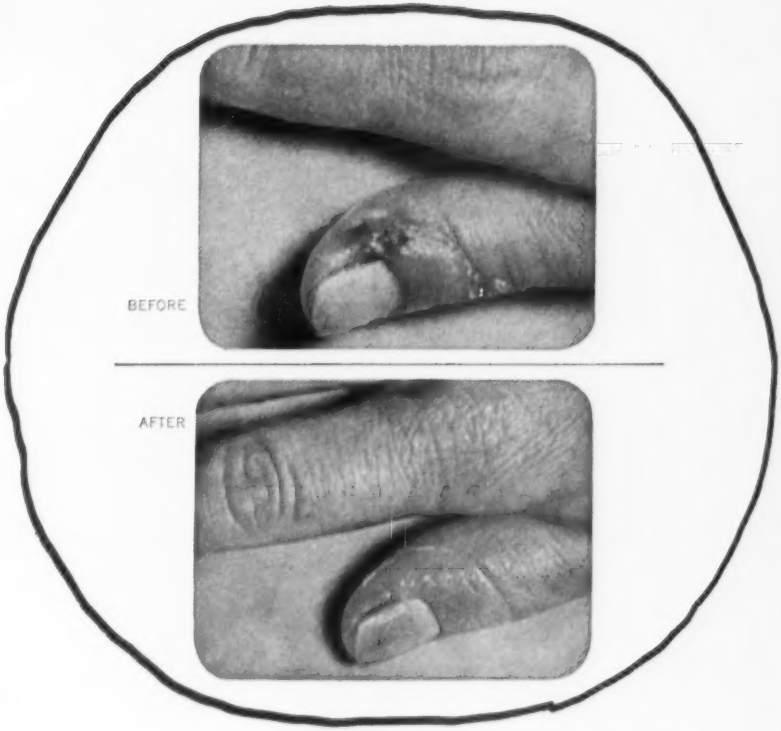
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PREMENSTRUAL DIURETIC AND ANALGESIC
For Premenstrual Tension and Dysmenorrhea

Each tablet contains:
Pamabrom..... 50 mg.
Acetophenetidin...100 mg.

—relieves premenstrual tension, essentially a water toxemia, by direct action on the anti-diuretic hormone.

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*eczematoid dermatitis*
*before*
*and 10 days after treatment*
*with*

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Vioform (iodochlorhydroxyquin U.S.P. CIBA)

**Cream**

Bactericidal, fungicidal, protozoacidal—virtually nonirritating, nonsensitizing, nontoxic—effective topical prescription for eczema and many other dermatoses. Cream 3% (water-washable base) and Ointment 3% (petrolatum base) in 50-Gm. tubes and 1-lb. jars.

C I B A *Summit, New Jersey*

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# for your tense peptic ulcer patients



## new
## ANTRENYL®-PHENOBARBITAL

depresses... ...gastrointestinal motility

...gastric acid secretion

...nervousness and irritability so common in the ulcer diathesis




**SUPPLIED:** Antrenyl-Phenobarbital Tablets (scored), each tablet containing 5 mg. Antrenyl and 15 mg. phenobarbital.

**Other forms:** Tablets, 5 mg. Syrup, 5 mg. per 4-ml. teaspoonful. Pediatric Drops, 1 mg. per drop.

**Antrenyl® bromide (oxyphenonium bromide CIBA)**

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Thank you doctor
for telling mother about..




The Best Tasting Aspirin you can prescribe

The Flavor Remains Stable down to the last tablet

Bottle of 24 tablets 15¢ (2½ grs. each)

*We will be pleased to send samples on request*

THE BAYER COMPANY DIVISION of Sterling Drug Inc., 1450 Broadway, New York 18, N. Y.

### Viral Schizophrenia

The possibility of a viral etiology of schizophrenia is postulated by Dr. V. M. Morozov of the Graduate School of Medicine, Moscow, after performing microscopic studies on the cerebrospinal fluid and nasal secretions of 60 patients. Smears were prepared and stained by impregnation with silver nitrate. A comparative study was done on 17 patients with nonschizophrenic mental disorders.

Intracellular, virus-like inclusions were found in 75% of the smears obtained from nasal secretions and in 30% obtained from cerebrospinal fluid. No definite evidence of such inclusions was found in the 17 control patients. In some schizophrenic patients, repeated smears showed a definite decrease in the number of positive findings during periods of remission.

J. Nevropat. i Psikhiat. (Moscow) 54:732-734, 1954.

## BELGIUM

### Surgery for Parkinsonism

Operation performed on the ansa lenticularis is often successful for treatment of parkinsonism. Little permanent motor impairment is caused by the procedure.

Drs. G. Guiot and G. Hoffmann approach the ansa lenticularis through the fissure of Sylvius. Surgery was successful in 22 of 46 patients with the disease; 21 of the patients were improved and 3 died postoperatively.

for early detection and better control of diabetes

"Make a routine urine sugar test on every patient."*

CLINITEST® BRAND REAGENT TABLETS



for detection of urine-sugar

*Barach, J. H.; Duncan, G. G.; Joslin, E. P., and Root, H. F.: Diabetes Mellitus, in Conn, H. F.: Current Therapy 1954, W. B. Saunders Company, Philadelphia, 1954, p. 368.

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AMES COMPANY, INC · ELKHART, INDIANA

Ames Company of Canada, Ltd., Toronto

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# Terra·Cortril

brand of oxytetracycline and hydrocortisone

**topical ointment**




**Terra·Cortril** Topical Ointment rapidly clears both underlying inflammation and superimposed infection, through the combined actions of CORTRIL®—most potent anti-inflammatory adrenocortical steroid, and TERRAMYCIN®—"perhaps the most effective antibiotic in pyogenic skin diseases."[2]

supplied: In 1/2-oz. tubes containing 3% TERRAMYCIN (oxytetracycline hydrochloride) and 1% CORTRIL (hydrocortisone, free alcohol) in a specially formulated, easily applied ointment base. also available: CORTRIL Topical Ointment and CORTRIL Tablets.

1. Rukes, J. M., et al.: Metabolism 3:481, 1954.
2. Peterkin, G. A. G.: Brit. M. J. 1:522, 1954.

PFIZER LABORATORIES *Pfizer* Division, Chas. Pfizer & Co., Inc. Brooklyn 6, New York




**hard to harness...**

It is often difficult to slow the pace of a "high powered" patient, but it *is* possible to provide gratifying relief when nervous tension results in gastric distress. Consider BiSoDoL Mints for these patients. BiSoDoL combines Magnesium Hydroxide, Calcium Carbonate, Magnesium Trisilicate to provide a well balanced combination of antacid alkalizing agents. BiSoDoL Mints assure freedom from constipation or diarrhea often associated with other types of antacids.

fast-acting BiSoDoL® mints

(contain no baking soda)

WHITEHALL PHARMACAL COMPANY • NEW YORK, N. Y.

Postoperative hemiparesis, aphasia, and respiratory and mental disturbances usually disappeared within two or three weeks.

The operation may also be employed for choreoathetosis.

Ann. méd.-psychol. (Paris) 112:572, 1954.

## ITALY

### Therapy of Pertussis

Neurologic symptoms can be reduced by administering vitamin K during the early stages of whooping cough. Drs. F. Mulé and L. Garufi of the University of Rome report that nocturnal coughing, convulsions, and vomiting rapidly disappear.

Aggiorn. pediat. (Rome) 5:549-558, 1954.

### Adrenal Medullectomy

Selective removal of the adrenal medulla may be preferable to total adrenalectomy for Raynaud's disease, hypertension, and endarteritis. Dr. L. Durante of Genoa obtained good results in 113 of 126 patients with Raynaud's disease, in 70 of 84 patients with hypertension, and in 6 of 8 patients with malignant hy-



# To relieve anxiety states and tension...

AND AS AN AID IN
ANTIHYPERTENSIVE
THERAPY

*When an Isolated Crystalline Rauwolfia Alkaloid is Desired*

# Serpiloid®

THE RIKER BRAND OF RESERPINE

Riker LABORATORIES, INC., LOS ANGELES 48, CALIFORNIA

pertension. Results with endarteritis were equivocal but apparently better than other therapeutic approaches achieve. The effect of adrenal medullectomy on paroxysmal hypertension, polycythemia, and scleroderma is under investigation at present.

Presse méd. (Paris) 62:1400, 1954.

## FRANCE

### Protective Silicone Ointment

Silicone creams and pastes apparently offer adequate protection against some forms of contact dermatitis.

Dr. R. Amado of Paris observes that silicone, chemically inert and water-repellent, is especially useful for industrial workers and persons with increased sensitivity to chemicals.

The cream is applied two or three times daily at first and once daily after two weeks. The silicone film can be easily removed with acetone, ether, alcohol, or a detergent. Although nonirritating to normal skin, the cream may cause transitory lesions if applied to open wounds or mucous membranes.

A study of 72 persons with dermatitis caused by oils, paints, rubber, and local anesthetics revealed that the regular use of a cream containing 30% silicone oils was protective in 55 instances.

In 17 patients with allergic dermatitis, silicone was found to be an ineffective agent.

Arch. mal. profess. (Paris) 15:288-290, 1954.



Triple Immunizing Agent

tri-immunol*

- Quick, effective immunity to Diphtheria, Tetanus, and Pertussis.
- Fewer and less severe reactions.
- Contains PUROGENATED® Toxoids, Aluminum Phosphate—Adsorbed.

Free—Immunization Records that you can offer to parents. Ask the Lederle Representative or write.

LEDERLE LABORATORIES DIVISION AMERICAN Cyanamid COMPANY PEARL RIVER, NEW YORK

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*TRADE-MARK

**. . . often effective** *where oral aminophylline has failed*

**. . . often tolerated** *where oral aminophylline is not*

# CHOLEDYL®

(choline theophyllinate, NEPERA)

*the* **new** *oral xanthine medication*

A symposium* on CHOLEDYL was published recently (May, 1954) in the International Record of Medicine and General Practice Clinics. Here are three of the principal advantages of CHOLEDYL over oral aminophylline, as noted in this study—

**markedly higher blood levels**

"... the ingestion of choline theophyllinate [choledyl] induced markedly significant increases in the theophylline blood levels when compared to those obtained after aminophylline. The increase was 60 to 75 per cent higher for the first two hours. . . ."[1]

(The therapeutic effect of aminophylline is due solely to its theophylline content.)

**minimal side effects**

"... gastrointestinal irritation with choline theophyllinate [choledyl] was a rare occurrence."[2]

**no drug fastness**

"Of great interest was the absence of the development of tolerance or resistance to the effects of the drug even after choline theophyllinate [choledyl] had been administered to patients for as long as 75 weeks."[3]

CHOLEDYL for *planned* diuresis, *prolonged* coronary vasodilation, *continued* relief of bronchospasm, *relief* and *prevention* of premenstrual tension

*Reprints available on request

**supplied:** *100 mg. tablets, bottles of 100 and 500;*
*200 mg. tablets, bottles of 100, 500 and 1000.*

**dosage:** *Adults—initiate with 200 mg. q. i. d.—preferably after meals and at bedtime. Adjust to individual requirements. Children over six—100 mg. t. i. d.*

1. Gagliani, J., et al.: Internat. Rec. Med. & Gen. Pract. Clin. *167*:251, 1954. 2. Grossman, A. J., et al.: Internat. Rec. Med. & Gen. Pract. Clin. *167*:263, 1954. 3. Batterman, R. C., et al.: Internat. Rec. Med. & Gen. Pract. Clin. *167*:261, 1954.

NEPERA CHEMICAL CO., INC., Pharmaceutical Manufacturers • Nepera Park, Yonkers 2, N.Y.

# MAZON dual therapy:

## Psoriasis generally severe in March



This case again demonstrates why MAZON dual therapy is the treatment of choice. Today more and more physicians prescribe pure, mild, nonirritating MAZON Soap to cleanse the skin and prepare it for medication with antiseptic, antipruritic, antiparasitic MAZON Ointment. This dual therapy is used with marked effectiveness in many cases of acute and chronic psoriasis, eczema, alopecia, ringworm, athlete's foot, and other skin conditions not caused by or associated with metabolic disturbances.

MAZON is greaseless . . . requires no bandaging; apply just enough to be rubbed in, leaving none on the skin. Available at all pharmacies.

. . skin entirely cleared in May









# MAZON

## dual therapy

Dispensed only in the original blue jar.

**Belmont Laboratories, Philadelphia, Pa.**

*FROM ABROAD*

## SWITZERLAND

### Therapy for Addison's Disease

Aldosterone, an adrenocortical hormone, may be used effectively for treatment of Addison's disease, report Dr. R. S. Mach and associates of the University Hospitals, Geneva. Clinical symptoms of the disease disappear within several hours after initiation of treatment, skin pigmentation regresses within a few days, and the orthostatic blood pressure regulation is restored without unusual increase in arterial pressure.

Aldosterone causes sodium and chlorine retention and increases potassium excretion; in the blood, typical signs of dilution and slight decrease of the potassium level are noted. Blood sugar curves in the glucose tolerance test normalize; the hyperglycemic peak increases and the hypoglycemic reaction is suppressed.

Because of low dosages, the hormone exerts no effect on the formed elements of the blood, nitrogen metabolism, reactions in the water-load test, or the 17-ketosteroid and corticoid levels in urine. Elevated blood pressure or pathologic water retention does not occur.

Schweiz. med. Wchnschr. (Basel) 84:407-416, 1954.

### Facial Nerve Paralysis

Hydrocortisone may be employed to shorten the course of facial nerve paralysis.

Dr. H. Seliger of Schmiedefeld

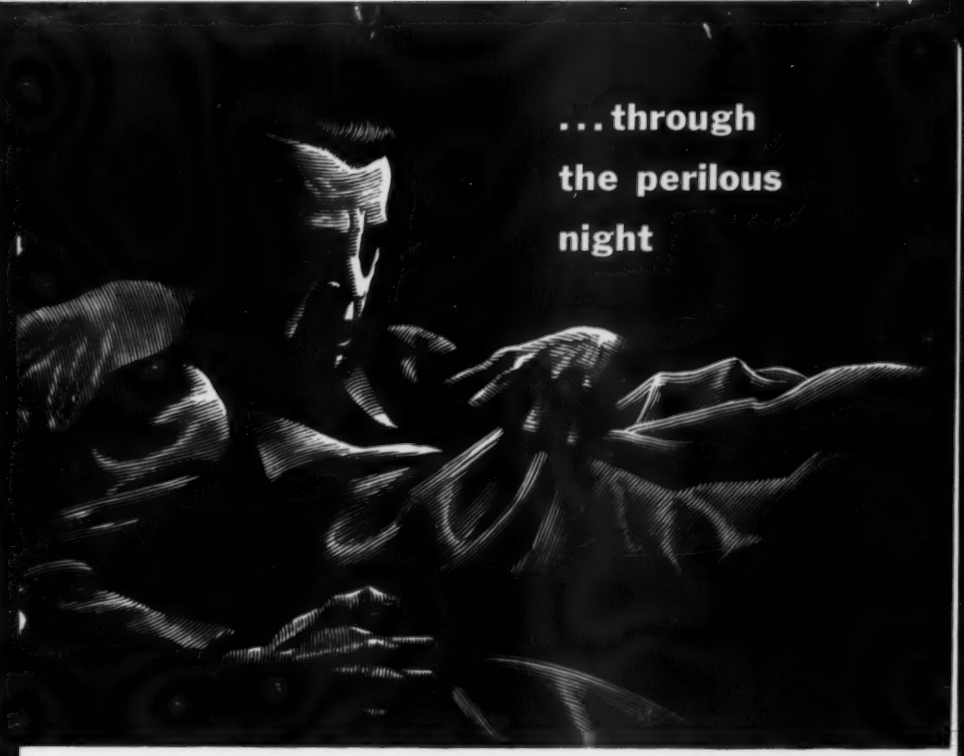

appropriate therapy
whenever you find constipation
associated with
biliary dysfunction

TABLETS
zilatone®
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BILE SALTS ... to improve biliary function
MILD LAXATIVES ... to relieve chronic constipation
DIGESTANTS ... to combat dyspeptic distress

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Generous trial samples on request

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1450 Broadway, New York 18, N. Y.




## You can prevent attacks in angina pectoris

Fear is a faithful companion. In angina pectoris, particularly, many patients live in constant dread of recurrent attacks.

Prophylaxis with Peritrate, a long-acting coronary vasodilator, offers new security in a majority of such cases. A single dose affords protection for as long as 4 to 5 hours, compared to 30 minutes or less with nitroglycerin.

Different investigators[1-3] observed that 80% of their patients responded to Peritrate therapy with fewer, less severe attacks . . . reduced nitroglycerin dependence . . . improved EKG's.

A variety of convenient dosage forms now extends these benefits. Peritrate Delayed Action tablets (10 mg.), taken with the regular bedtime dose of Peritrate (plain) help allay the fear of nighttime attacks. Adapted to the recommended daily dosage of 40-80 mg., Peritrate is available in 10 mg. and 20 mg. tablets. And when added sedation is indicated, you can prescribe Peritrate (10 mg.) with Phenobarbital (15 mg.).

1. Winsor, T., and Humphreys, P.: Angiology *3*:1 (Feb.) 1952. 2. Plotz, M.: New York State J. Med. *52*:2012 (Aug. 15) 1952. 3. Dailheu-Geoffroy, P.: L'Ouest-Médical, vol. 3 (July) 1950.

**Peritrate®**

**tetranitrate**

(BRAND OF PENTAERYTHRITOL TETRANITRATE)

**WARNER-CHILCOTT**

injects 50 mg. three times daily for two days, then twice daily for two days; 25 mg. is then given three times daily for the next ten days.

Hydrocortisone apparently improves the circulation around the nerves and facilitates restitution.

Schweiz. med. Wchnschr. (Basel) 84:1277, 1954.

## ALGERIA

### Treatment for Hepatitis

Cortisone and ACTH may be of advantage in selected cases of hepatitis and cirrhosis.

Drs. J. Lebon of Algiers and G. Gelin of Oran used cortisone in 6 cases of catarrh, in 1 case of icterus gravis, and in 8 cases of cirrhosis with ascites.

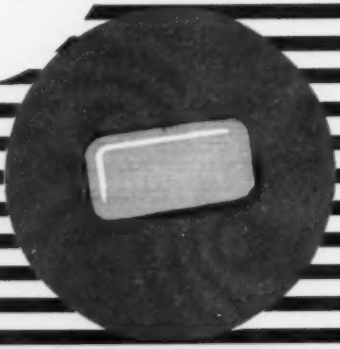
In patients with hepatitis and cirrhosis diuresis was greatly increased. Appetite returned and a sense of well-being was noted within forty-eight hours. Liver function tests were normal after about two weeks in cases of hepatitis. Repeated liver biopsies showed normal parenchyma and a regression of the inflammatory reaction.

In cases of cirrhosis, edema and right quadrant pain subsided, with a reduction or stabilization of ascites.

Few side effects of cortisone therapy occur when patients are kept on low-sodium diets. Hyperglycemia necessitated insulin treatment in 1 patient, and a peptic ulcer was reactivated in another.

Ann. méd. (Paris) 55:421-466, 1954.

after "T & A"
aspergum
and for sore throats
specifically designed to relieve throat soreness through prolonged direct contact of aspirin.
White Laboratories, Inc.
Kenilworth, N. J.



# A new concept in antibiotic therapy

**a combination of 2 antibiotics**

**in one capsule provides**

**antibacterial therapy**

**plus**

**antifungal prophylaxis**

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MYSTECLIN

SQUIBB TETRACYCLINE-NYSTATIN

**antibacterial . antifungal**

From an editorial in the J.A.M.A. (156:991, Nov. 6, 1954):

# Oral broad spectrum antibiotic therapy may cause infection with Candida albicans

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MYSTECLIN

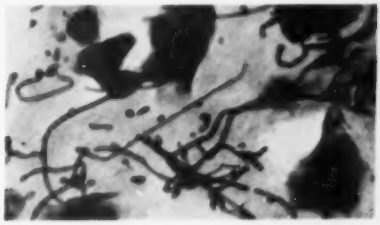
SQUIBB TETRACYCLINE-NYSTATIN

*better tolerated, more effective broad spectrum antibiotic therapy plus prophylaxis of intestinal moniliasis*

## Some clinical manifestations of moniliasis



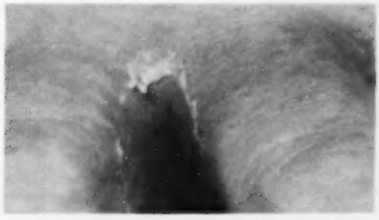
Pruritus ani



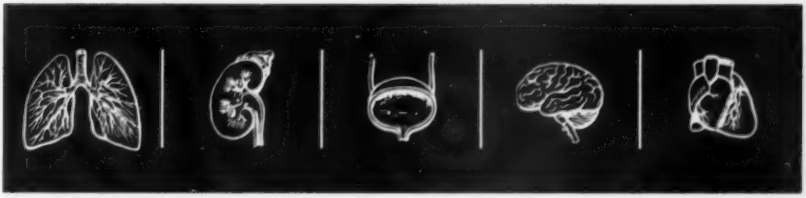
Vaginal moniliasis



Thrush



Intertrigo



Systemic monilial infections involving the lungs, kidneys, bladder, brain, and heart have been reported. One group of investigators reported five fatal cases of moniliasis following antibiotic therapy. (J.A.M.A. 152:206, May 16, 1953).

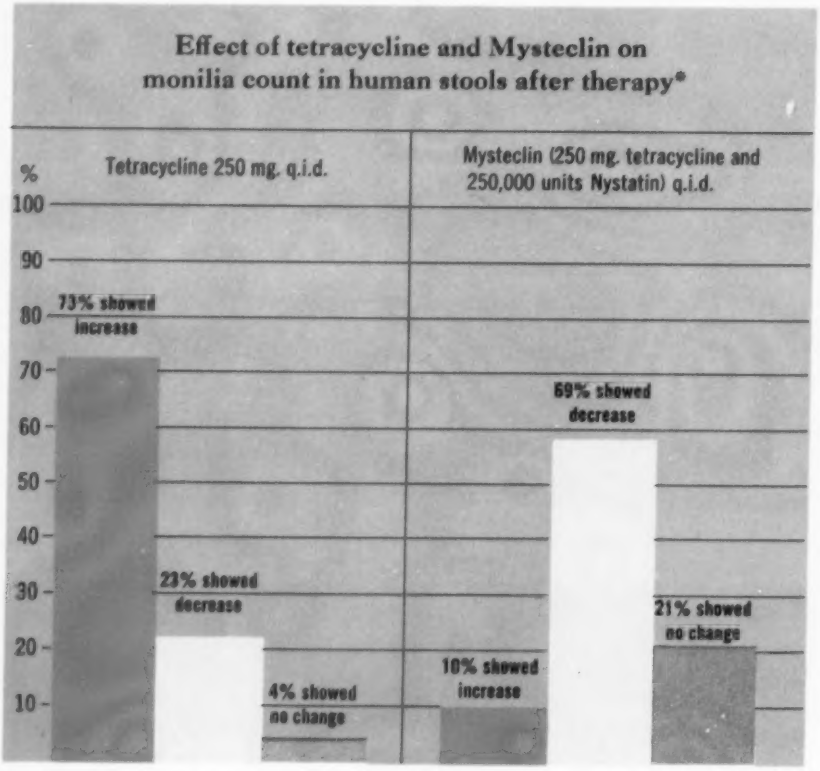
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# MYSTECLIN

**SQUIBB TETRACYCLINE-NYSTATIN**

***better tolerated, more effective broad spectrum antibiotic therapy, plus prophylaxis of monilial infections which may spread from the gastrointestinal tract.***

## Clinical Demonstration:




*Newcomer, V. D., Wright, E. T., and Sternberg, T. H.: Antibiotics Annual, 1954-55, Medical Encyclopedia Inc. In Press.

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# MYSTECLIN

SQUIBB TETRACYCLINE-NYSTATIN

*better tolerated, more effective broad spectrum antibiotic therapy plus prophylaxis of intestinal moniliasis*

## Demonstration of protective effect of Mysteclin*



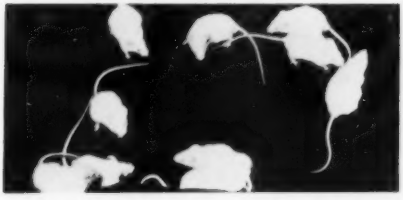
Candida albicans: all alive

48 hours after intraperitoneal administration of *Candida albicans* in 10 mice, all the mice were alive.



Candida albicans plus broad spectrum antibiotic: all dead

Broad spectrum antibiotics increase the virulence of *Candida albicans* infections. 48 hours after intraperitoneal administration of *Candida albicans and a broad spectrum antibiotic*, all the mice were dead.



Candida albicans plus broad spectrum antibiotic plus Nystatin: all alive.

Nystatin has a protective effect against *Candida albicans* infections. 48 hours after intraperitoneal administration of *Candida albicans, a broad spectrum antibiotic, and Nystatin*, all mice were alive.


*Newcomer, V. D., Wright E. T., Graham, J., and Sternberg, T. H.: Exhibit at Southern Medical Association meeting, St. Louis, Mo., November 8-11, 1954.

*Brown, R., Hazen, E. L., and Mason, A.: Science 117:609, 1953.

*Hazen, E. L., Brown, R., and Mason, A.: Antibiotics and Chemotherapy 3:1125, 1953.


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# MYSTECLIN

SQUIBB TETRACYCLINE-NYSTATIN

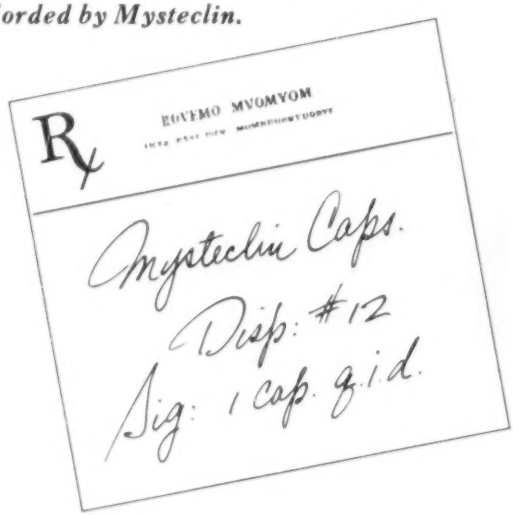
***better tolerated, more effective broad spectrum antibiotic therapy plus prophylaxis of intestinal moniliasis***



**Mysteclin costs the patient only a few pennies more per capsule than does tetracycline alone.**

---

*Any patient sick enough to need broad spectrum antibiotics deserves the added protection against intestinal moniliasis afforded by Mysteclin.*




*Supply:* Each capsule contains 250 mg. of tetracycline and 250,000 units of Nystatin. Bottles of 12 and 100.

*Minimum adult dose:* 1 capsule q.i.d.

*Also available:* Steclin (Squibb Tetracycline) Capsules, Suspension, Intramuscular.

Mycostatin (Squibb Nystatin) Tablets.

# MYSTECLIN

SQUIBB TETRACYCLINE-NYSTATIN

**antibacterial · antifungal**

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Think of a gag that fits the illustration. For every issue a new gag is published and the author is sent $5. The April 1 winner is

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*"... and when I asked him how much the doctor got when he was catheterized, he said $5."*




# DRAMATIC RELIEF

**from Hemorrhoids and Post-Hemorrhoidectomies**

In clinical tests, Americaine Ointment relieved tender hemorrhoids in 3 to 5 minutes, sustained relief for 4 to 6 hours. The only ointment containing 20% dissolved benzocaine, most potent, least toxic control of surface pain and itching.

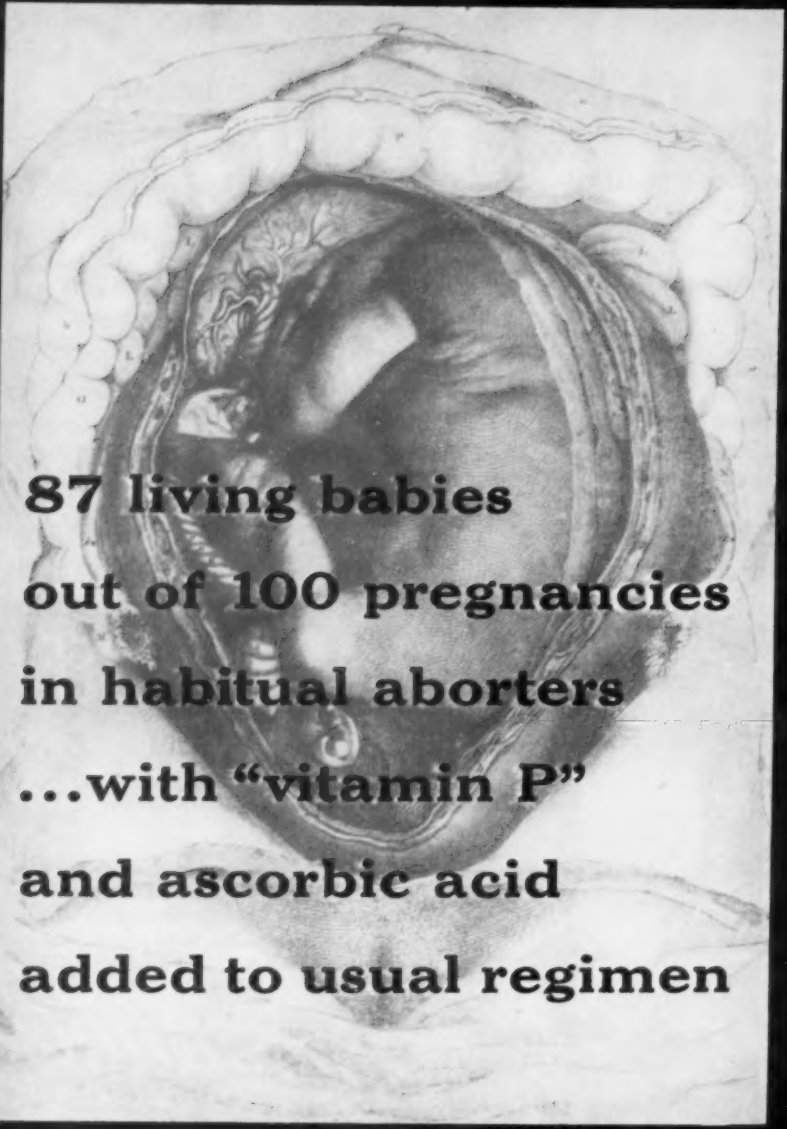
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and surface pain




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**87 living babies**
**out of 100 pregnancies**
**in habitual aborters**
**...with "vitamin P"**
**and ascorbic acid**
**added to usual regimen**

Noting frequent nosebleeds, gum bleeding and bruises in a high percentage of pregnant women who had repeated spontaneous abortions, one investigator added "vitamin P" with ascorbic acid to usual therapy.

**results: 87 live infants in 100 pregnancies**

---

Since over 80% of habitual aborters showed capillary fragility in another study, "vitamin P" with ascorbic acid was added to accepted methods of treatment.

**results: living baby born to . . . 11 of 13 patients who had had 2 spontaneous abortions each . . . 4 of 7 patients who had had 3 to 8 abortions each**

---

**new, simple, safe method of fetal salvage in threatened or habitual aborters . . . strengthens intercellular cement and increases capillary resistance**

# CVP

Each C.V.P. capsule or each teaspoonful (5 cc.) of syrup provides:
Citrus Flavonoid Compound* . . . 100 mg.
Ascorbic Acid (Vitamin C) . . . . . 100 mg.
*water-soluble, whole natural "vitamin P" complex is more active than insoluble rutin or hesperidin.

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**rationale:** The correction of abnormal capillary fragility in habitual aborters supposedly "decreases the possibility of retroplacental hemorrhage, or possibly enhances the efficacy of established therapeutic regimens by modifying capillary permeability and vascular disturbances throughout the body, whether they be in the skin, liver or the placenta."

samples and literature from **u. s. vitamin corporation**
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# *Washington* LETTER

## Health Insurance Legislation Receives Priority

CONGRESS, being Democratic, has not taken all of Mr. Eisenhower's health bills to its bosom, but neither has it rejected any just because they have a White House tag.

The plan for a voluntary health insurance program for the benefit of federal civilian employees is a must on the White House list, and it also appears to be high up on the Congressional list. Some changes may be made—principally those suggested by the American Hospital Association and Blue Cross—but the basic outline of the bill is moving rapidly toward enactment.

Under this proposal, the federal government would set up a nationwide policy to cover home and office calls, hospital bed costs and special charges, preventive care in clinics, and major medical care costs, up to $2,500 per illness. If the employees in a certain area thought another plan had more advantages, they would be allowed to pass up the nationwide policy, providing the plan they preferred met certain standards.



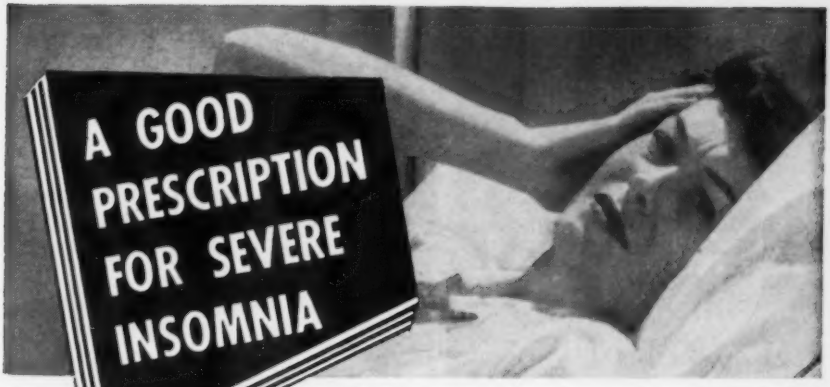

*"I'm conducting an impartial survey."*

The national plan would be a straight indemnity proposition, but medical service arrangements could be worked out locally.

The federal government would contribute a maximum of $1.50 a month toward the policy costs of an individual without dependents, and $4 a month to the head of a family. It is estimated that the total cost to the government would be $55 million per year.

Spokesmen for federal employee unions believe that the federal contribution is too small, but they are willing to accept the plan. Otherwise there is no opposition, and little criticism.

Another bill apparently making sound progress is one calling for a three-year, $90-million federal grant program to stimulate research in cancer, multiple sclerosis, poliomyelitis, arthritis and rheumatism,




Intractable insomnia may be a symptom of many acute illnesses, especially those accompanied by pain or fever. In such cases a truly effective soporific is needed.

At the annual meeting of the *British Medical Association* in 1954, Prof. D. M. Dunlop* of Edinburgh said that "chloral hydrate is a much neglected but efficient hypnotic for sick patients."

Bromidia provides an 8 hour span of sound sleep because it combines the quick action of chloral hydrate with the prolonged effect of potassium bromide and the therapeutic adjuvant, ext. hyoscyamus. The composition per fluid ounce is chloral hydrate 91 gr., potassium bromide 91 gr. and ext. hyoscyamus 1 gr.

The effective dose of Bromidia for relief of *insomnia* is 1 to 2 teaspoonfuls on retiring In cases of *nervousness*, the sedative dose is 1/2 to 1 teaspoonful repeated up to three times daily. Maximum dosage 3 teaspoonfuls per diem.

Bromidia is available on prescription in 4 fld. oz. or 1 pint bottles.

*Reported in foreign letter from England, *Journal of the American Medical Association* 155 : 1517 (Aug. 21) 1954.

**Bromidia** *for Severe Insomnia*

**BATTLE & COMPANY 4026-28 OLIVE STREET, ST. LOUIS 8, MISSOURI**

***Manufacturers of High Grade Pharmaceuticals***

MAIL COUPON TODAY — Test BROMIDIA YOURSELF

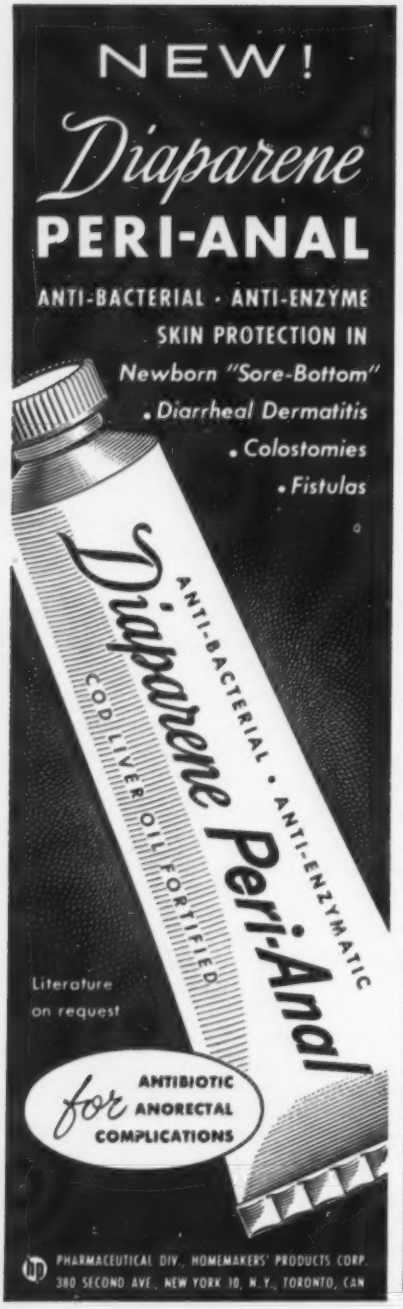
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Please send me professional literature and sample of BROMIDIA.

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blindness, heart disease, and mental illness.

This is not an administration bill. The Senate sponsors are Sens. Lister Hill (D., Ala.) and Styles Bridges (R., N.H.). Sen. Hill is conceded to be the most important senator on health legislation; he is chairman of the Labor and Welfare Committee which handles health bills and at the same time is head of the subcommittee that passes on most appropriations for federal health and medical programs. Sen. Bridges has a commanding role within his party as chairman of the Senate Minority Policy Committee. The House sponsor is Rep. Percy Priest (D., Tenn.).

Money would go out in grants from Washington to virtually any reputable organization or individual, public or private, that had an important contribution to make in research on the specified diseases. This program would in no way interfere with the all-government research going on at the National Institutes of Health, but the two operations would be coordinated.

This proposal is particularly interesting to medical schools, which apparently will not receive any other help from this Congress.

The administration's reinsurance bill has hardly left dead center. Mr. Priest introduced it as a part of the Eisenhower omnibus health program but did not pledge his support. Sen. Hill declined to show the White House even this consideration. It was introduced by Sen. H. Alexander Smith (R., N.J.).

At present, the administration's bill to expand and make more uniform the medical care of military dependents is in the balance. Con-

*(Continued on page 66)*

*four reports*

*attesting to the safety of*

*'Dexedrine' Sulfate in*

# obese hypertensives

**1**

Goodman and Housel (the latter is chief of the Jefferson Hospital Hypertension Clinic, Philadelphia) conducted exhaustive studies of 100 obese hypertensives. They concluded:

- "Prolonged use of oral 'Dexedrine' Sulfate does not affect the long term blood pressure in obese hypertensive patients."
- "'Dexedrine' consistently reduces the appetite . . . "

Goodman, E.L., and Housel, E.L.: Am. J. M. Sc. 227:250 (March) 1954.

**2**

"There is no apparent effect on hypertension, and the drug can be used freely in hypertensives with obesity . . . "

Finch, J.W.: J. Oklahoma M.A. 40:119.

**3**

'Dexedrine' "has been given in the cases where the blood pressure was over 200 systolic and 100 diastolic without any ill effects, and [many of] these patients have obtained . . . a drop in blood pressure."

Ferguson, H. E.: Virginia M. Monthly 76:222

**4**

Livingston, after treating a series of 49 patients with 'Dexedrine' for 1-5 years reported that the blood pressure remained "essentially unchanged throughout the course of the treatment."

Livingston, S.; Kajdi, L., and Bridge, E.M.: J. Pediat. 32:490.

## Dexedrine* Sulfate

dextro-amphetamine sulfate, S.K.F.

Tablets • Elixir • Spansule† capsules

*Smith, Kline & French Laboratories, Philadelphia*

*T.M. Reg. U.S. Pat. Off.

†T.M. Reg. U.S. Pat. Off. for S.K.F.'s brand of sustained release capsules. Patent Applied For

Now you can do more for

# Stress SFortified

The availability of such anti-infectives as Terramycin, Tetracyn and penicillin has not altered the wise admonition to "treat the patient as well as the disease." As the National Research Council[1] has emphasized, certain water-soluble vitamins (B-complex and C) and vitamin K are involved in body defense mechanisms as well as in tissue repair and are required in increased amounts during the stress of febrile infections. Yet there is often a considerable reduction in the normal supply of these important nutritional elements in acutely ill patients who are candidates for antibiotic therapy.

Unique new Stress Fortified Terramycin-SF, Tetracyn-SF and Pen-SF contain the stress vitamin formula recommended by the National Research Council[1] for therapeutic use during sickness or injury as a significant contribution to rapid recovery and convalescence. The patient is assured the maximum benefits of modern antibiotic therapy plus the needed vitamin support—without additional prescriptions, and at little additional cost.

*1. Pollack, H., and Halpern, S. L.: Therapeutic Nutrition, Prepared with Collaboration of the Committee on Therapeutic Nutrition, Food and Nutrition Board, National Research Council, Baltimore, Waverly Press, 1952.*

the patient with infection . . .

*not only fight the infection,*

*but also Stress Fortify the patient*

with a *single* prescription of

# ®Terramycin-SF

*Brand of oxytetracycline with vitamins*

CAPSULES (250 mg.)

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*Brand of tetracycline with vitamins*

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ORAL SUSPENSION (fruit flavored)
(125 mg. per 5 cc. teaspoonful)

# Pen-SF*

*Brand of penicillin G potassium with vitamins*

CAPSULES (200,000 units)

***The minimum daily dose of each antibiotic***
(1 Gm. of Terramycin or Tetracyn, or 600,000 units of penicillin)
***Stress Fortifies the patient*** with the stress vitamin formula ***as recommended by the National Research Council . . .***

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|---|---|
| Ascorbic acid, U.S.P. | 300 mg. |
| Thiamine mononitrate | 10 mg. |
| Riboflavin | 10 mg. |
| Niacinamide | 100 mg. |
| Pyridoxine hydrochloride | 2 mg. |
| Calcium pantothenate | 20 mg. |
| Vitamin $B_{12}$ activity | 4 mcg. |
| Folic acid | 1.5 mg. |
| Menadione (vitamin K analog) | 2 mg. |

***for little more than the cost of antibiotic therapy alone***

*available only from* **Pfizer**

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*Division, Chas. Pfizer & Co., Inc.*

gress, as judged by opinions expressed at hearings, would like to do something in this direction, but is not anxious to set off a large and costly expansion of the military medical services. This bill has the strong personal support of the President, however, and cannot be considered as lost or even stalled.

Mr. Eisenhower is having little trouble with his mental health program. This calls for contributions to states to help them in their regular mental health work, and grants for particular projects that promise to develop new and better hospital technics and medical treatment for mentally ill patients.

A bill to improve the medical care of public assistance recipients, to whose support the federal government contributes, is a White House proposal and is not being opposed in Congress. Assuming it is enacted, the government will be assured that funds turned over to states for this medical care program actually are used for this purpose. Under the present system, the government increased support money for these cases on the understanding the states would use the addition for this purpose. The result has not been encouraging.

The bill would earmark $3 a month for each adult and $1.50 for each child, providing the state also spent this much money. The funds could be used for medical care only.

Some months ago, the President appointed a commission to suggest

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GRAVIDOX*

Pyridoxine-Thiamine *Lederle*

For preventing and treating nausea and vomiting of pregnancy

Pyridoxine ($B_6$) and Thiamine ($B_1$) have proved more effective in combination than either alone in the prevention and treatment of hyperemesis gravidarum. GRAVIDOX, in both tablet and parenteral form, combines these vitamins, providing you with a nutritional approach to the problem. GRAVIDOX may also be useful for the prevention and relief of the nausea and vomiting associated with radiation sickness.

Each GRAVIDOX tablet contains: Thiamine HCl—20 mg., Pyridoxine HCl—20 mg. Each cc. of GRAVIDOX parenteral solution contains: Thiamine HCl—50 mg., Pyridoxine HCl—50 mg.

Average dose: 5 to 12 tablets daily, in divided doses, at times when vomiting is less likely to occur; or 1 cc. parenteral solution 2 or 3 times weekly.

LEDERLE LABORATORIES DIVISION AMERICAN Cyanamid COMPANY Pearl River, New York

*REG. U. S. PAT. OFF.



*Establishing desired eating patterns*

# Obedrin®

*and the 60-10-70 Basic Diet*

With Obedrin and the 60-10-70 Basic Diet, the overweight patient receives specific, proved aids to control overeating. Loss of weight is accomplished more comfortably, while the patient develops new and better eating habits.*

**OBEDRIN CONTAINS:**

Methamphetamine for its anorexigenic and mood-lifting effects.

Pentobarbital as a corrective for any excitation that might occur.

Vitamins $B_1$ and $B_2$ plus niacin for diet supplementation.

Ascorbic acid to aid in the mobilization of tissue fluids.

Obedrin contains no artificial bulk, so the hazards of impaction are avoided. The 60-10-70 Basic Diet provides for a balanced food intake, with sufficient protein and roughage.

*Eisfelder, H. W.: Am. Pract. & Dig. Treat., *5*:778 (Oct. 1954).

**FORMULA:**

Semoxydrine HCl (Methamphetamine HCl) 5 mg.; Pentobarbital 20 mg.; Ascorbic acid 100 mg.; Thiamine HCl 0.5 mg.; Riboflavin 1 mg.; Niacin 5 mg.

*Write for 60-10-70 Diet Pads, Weight Charts, and samples of Obedrin.*

**The S. E. MASSENGILL COMPANY**

*Bristol, Tennessee*

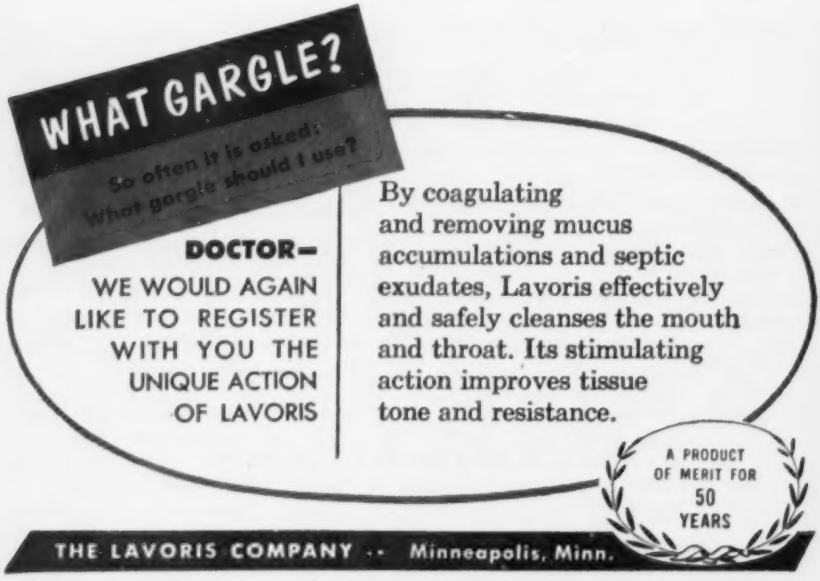
a better system for handling the illicit narcotics and addiction problems. Pending the committee's recommendations, the administration held up introduction of legislation. But a group of 43 senators decided not to wait. They have introduced a bill to completely revise the federal system for controlling illegal traffic and treating addicts.

The bill might be well on its way by now except for one provision, which its sponsors think is basic. The Justice Department, rather than Treasury's Narcotics Bureau, would be made responsible for enforcing laws pertaining to narcotics. The National Association of Retail Druggists—large, alert, and vociferous—finds a lot of minor faults in the bill, but believes that bringing the FBI into the picture would be a great mistake. On this they are supported by the American Pharmaceutical Association, although the drug manufacturers are inclined to go along with the rest of the bill.

On the medical phase, the bill would set up a new Bureau of Clinics within Public Health Service and would authorize the construction of more hospitals and clinics for addicts. Grants would be authorized to states to improve procedures and conditions in mental hospitals.

### Washington Notes

¶ The new medical director of Veterans Administration, Dr. William S. Middleton, is in a fine position to reach a compromise with the American Medical Association in

NOW PIPERIDOL ACTION

for peptic ulcer pain ; spasm

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# PIPTAL®



relief day and night

without urinary retention or constipation

## normalizes gastric motility and secretion

Closely related to the visceral eutonic DACTIL,® PIPTAL curbs gastric hypermotility and duodenal spasm without significantly altering normal tonus or motility. A postganglionic parasympathetic inhibitor, cholinolytic PIPTAL normalizes gastric secretion, favors ulcer healing without undue interference with digestion.

## without urinary retention or constipation

Unlike compounds of other derivation, PIPTAL, latest of the LAKESIDE piperidol series, has negligible effect on the bladder and distal colon.

Mydriasis, dryness of the mouth and tachycardia occur infrequently and are usually mild and transient. Side effects necessitating withdrawal of PIPTAL have not been observed.

### for relief day and night

One tablet T. I. D. and one or two H. S. Each tablet contains 5 mg. of PIPTAL, the only brand of N-ethyl-3-piperidyl-benzilate methobromide.

## cholinolytic

# PIPTAL

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the argument over care of nonservice cases. He has high standing among nongovernment doctors and knows how government medicine works. Vice Adm. Joel T. Boone, who held his own in the two-year skirmish with the AMA, retired because of ill health and not because of pressure.

¶ The administration has unexpectedly come out for a larger payment to support World Health Organization. In 1950 and 1952 Congress restricted the United States' share to one-third of WHO's budget or $3 million, whichever is smaller. Now the administration is proposing a $5 million limit. WHO would accommodate by increasing its budget so that the one-third limit would not be a problem.

¶ Sen. Irving M. Ives (R., N.Y.) is proposing that a 25-member commission be appointed to study "problems stemming from the increasing proportion of aging persons." The study would embrace medical care, housing, recreation, and all other important factors. Also before Congress is the legislation, first offered in 1951, for sixty days' free hospital care for those past 65 and eligible for Social Security payments.

¶ A total of 12 medical schools now are participating in the Defense Department program to modernize and expand courses on military medical subjects. The new schools are Georgetown, Ohio State, Pennsylvania, Virginia, Baylor, Tufts, and Wisconsin.





Smooth and pain-free range of motion with complete muscle relaxation is accomplished by Tolyphy without loss of muscle tone or depressant effect on the central nervous system.

**Tolyphy combines:**

**A.** Powerful spasmolytic action of Tolyspaz (Chimedic brand of mephenesin) with

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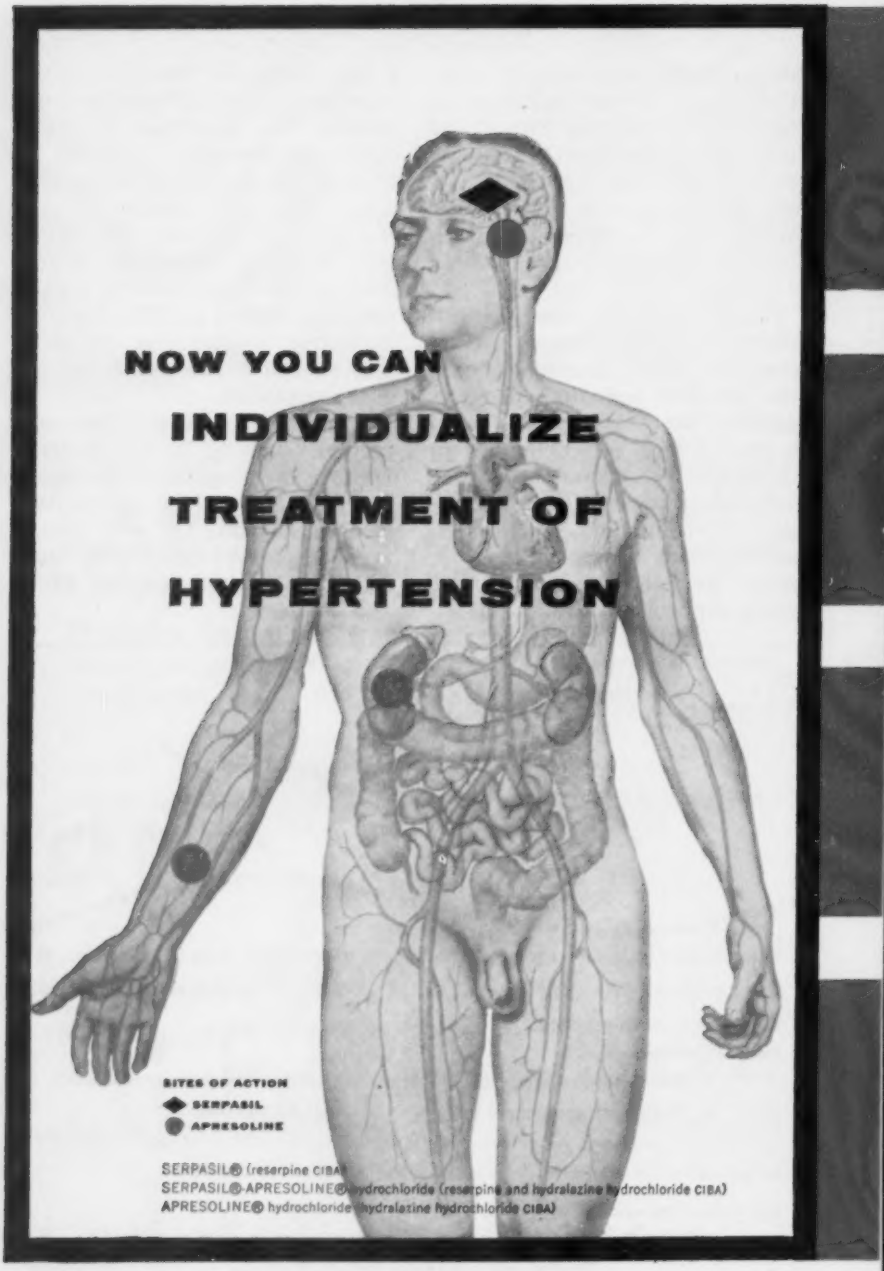
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INDIVIDUALIZE
TREATMENT OF
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SITES OF ACTION
SERPASIL
APRESOLINE
SERPASIL® (reserpine CIBA)
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APRESOLINE® hydrochloride (hydralazine hydrochloride CIBA)

**For initial therapy—in all cases:**

SERPASIL, a pure crystalline alkaloid of rauwolfia root—particularly effective in the neurogenic forms of hypertension. *Acts centrally*—tranquilizes, moderately lowers blood pressure, slows heart rate.

# Serpasil®

**When combination therapy is indicated:**

SERPASIL-APRESOLINE, a combination product offering convenience and economy in the more complicated cases involving both neurogenic and humoral factors.

# Serpasil®-Apresoline®

**In more refractory cases requiring further individualization of dosage:**

APRESOLINE *acts centrally and peripherally* for a marked antihypertensive effect. Increases renal plasma flow—produces vasodilatation—inhibits pressor substances.

# Apresoline®

| | |
|---|---|
| Serpasil® | Tablets, 0.1 mg., 0.25 mg. and 1.0 mg.<br>Parenteral Solution (for neuropsychiatric use only), 2.5 mg. per ml., in 2-ml. ampuls.<br>Elixir, 0.2 mg. per 4-ml. teaspoonful. |
| Serpasil®-Apresoline® | Tablets, each containing 0.1 mg. of Serpasil and 25 mg. of Apresoline.<br>Tablets, each containing 0.2 mg. of Serpasil and 50 mg. of Apresoline. |
| Apresoline® | Tablets, 10 mg., 25 mg., 50 mg. and 100 mg.<br>Ampuls, 1 ml., 20 mg. per ml. |

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SUMMIT, N. J.

SUSPENSION

# SULFOSE®

Triple Sulfonamides (Sulfadiazine, Sulfamerazine, Sulfamethazine)

## FOR **FULLEST** RESPONSE IN URINARY-TRACT INFECTIONS

Combined Sulfonamides for:

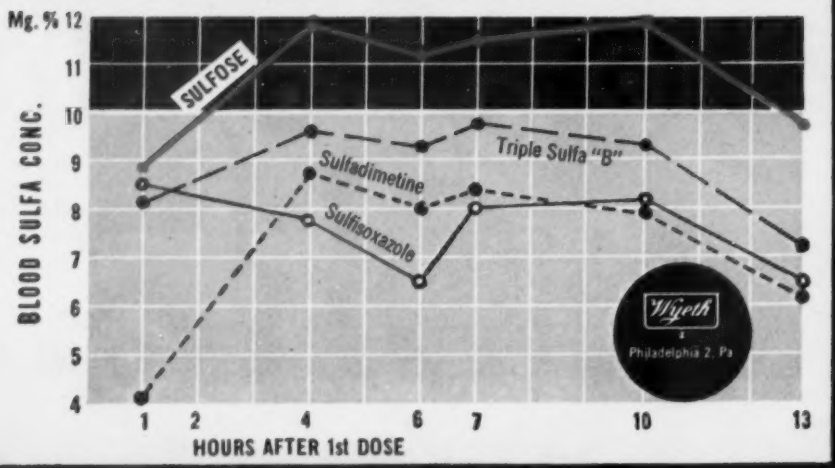
- *Higher* Blood Levels
- *More Prolonged* Blood Levels
- *Maximal* Safety

Suspension SULFOSE promotes the fullest response because it combines three potentiating sulfonamides in an alumina-gel base. Comparative studies show that this is the combination that induces "... both higher initial [and] more prolonged therapeutic levels."[1] Unlike single sulfonamides, Suspension SULFOSE couples threefold antibacterial action to multiple urinary solubility. For *effective* therapy with *maximal* renal safety.

*Supplied:* Suspension SULFOSE, bottles of 1 pint. Also available: Tablets SULFOSE, bottles of 100 and 1000.

1. Berkowitz, D.: Antibiot. & Chemo. *3*:618 (June) 1953

**BLOOD SULFA LEVELS FOLLOWING ORAL ADMINISTRATION OF VARIOUS COMPOUNDS[1]**



MODERN MEDICINE
THE JOURNAL OF DIAGNOSIS AND TREATMENT

# THE EDITOR'S PAGE

*by* WALTER C. ALVAREZ, *Editor-in-Chief*

## A Drug Which Produces Psychosis

For years physicians have wondered if the acute attack of many patients with psychosis might have been brought on by the appearance of some toxin in the blood. Actually, a number of physiologists have been searching for some such chemical but as yet without much result. Of course, man has always known that certain drugs such as alcohol, hashish, mescaline, opium, or cocaine will modify a man's sanity or give him peculiar visions. Today we know that porphyrins in the blood, when they are not metabolized, will cause an individual to become neurotic.

Recently, it has been discovered that d-lysergic acid diethylamide will temporarily make a person feel and behave like a schizophrenic. The effects last from a few hours to several days or two weeks. The patient feels a withdrawal from reality and a loss of contact with the world about him. The person's own image seems to him to become larger or smaller. A division in the sense of individuality may appear, so that one part of the person may seem to be watching the other. Some persons scream or cry or have violent outbursts. Many become talkative, while others lose the power of speech for a while. Consciousness is clearly retained, although it may become unrelated to the world. Some individuals may experience hallucinations and fantasies.

In England, Sandison, Spencer, and Whitelaw of the Powick Mental Hospital near Worcester have been using the drug to help patients tell about the mental processes which preceded their psychoses.

## Visceral Epilepsy

In a recent paper, Drs. Donald W. Mulder, David Daly, and Allan Bailey described the visceral discomforts seen in 100 cases of atypical epilepsy (*Arch. Int. Med.* 93:481-493, 1954). A tumor of the brain was found in 32 of the patients. Many of these patients described attacks of nausea, abdominal discomfort, occasional vomiting, and much borborygmus, with, at times, salivation, and, rarely, involuntary defecation.

Occasionally, there was a cardiorespiratory storm with palpitation, or there were peculiar sensations of some electric disturbance arising in the abdomen and running up into the neck. In a spell the patient might perspire or his face might blanch or become flushed.

These cases are not very rare. Many physicians must be seeing such attacks; all physicians should be on the watch for them. In these cases, electroencephalograms should be made and a neurologist consulted. Unfortunately, such spells are seldom recognized for what they are and, as a result, the patient's abdomen is often explored.

The most important point about the spells is the fact that they keep coming in paroxysms, out of a clear sky. This fact should always make the attending physician think quickly of epilepsy or severe migraine.

## Anorexia Nervosa in Young Women

The older I get, the surer I am that most girls with anorexia nervosa are slightly psychotic, probably by inheritance. Some of the women are definitely schizoid. Even those who have the syndrome after some unpleasantness in the home or after loss of a beau are rarely normal and well-adjusted. Some years ago, a group of psychiatrists showed that many of these more or less psychotic individuals had come from homes with poorly adjusted parents.

This does not mean that these girls cannot put on weight or be cured of anorexia; the trouble is that later, even when the girl gets a good husband and escapes her often psychotic mother, she is likely to continue to be sickly or difficult or she may have periods of slight psychosis or suffer from several attacks of anorexia.

*Special Article*

# The Outlook in Poliomyelitis

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*Prepared for Modern Medicine*

THE outlook for early control of paralytic poliomyelitis is definitely favorable. The questions remain: How soon can this control be accomplished? Exactly what means shall be employed to achieve this long-range goal as soon as possible?

Immediate concern, however, is with the problem of how many cases of paralytic poliomyelitis we can hope to prevent during 1955. The solution to this problem involves both scientific research and medical logistics.

We have every reason now to believe that the trivalent, formalinized poliomyelitis virus vaccine developed by Dr. Jonas Salk at the University of Pittsburgh, if employed in a wide-scale immunization program, will significantly reduce the incidence of paralytic poliomyelitis as it now occurs under natural conditions of exposure.

The certainty of this belief, originally compounded of theoretic and experimental considerations and limited clinical observations, depends upon the final outcome of the evaluation of the Salk vaccine under the conditions established in the 1954 vaccine field trial. This evaluation and the reports based on it have been entrusted to the independent Poliomyelitis Vaccine Evaluation Center at the University of Michigan, under the directorship of Dr. Thomas Francis, Jr. His facts and interpretations must serve physicians and public health authorities everywhere as a definitive guide to the use of the vaccine.

Long before anyone could hope to know whether the Salk vaccine was effective in preventing paralytic poliomyelitis, the National Foundation for Infantile Paralysis, which sponsored the field trial, felt itself morally obliged to make plans for a 1955 poliomyelitis vaccine program on the *assumption* that the vaccine was effective. We felt that we could not be in a position of having established a vital scientific fact and then not being able to implement it. No one would want to say this spring, "Yes, the vaccine works—but there is no vaccine."

To appreciate the detailed plans for the projected 1955 poliomyelitis vaccine program, the concept of medical logistics must first be introduced.

Logistics is a term commonly

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employed in military matters and deals with the vital services of supply to fighting forces. In the sense that physicians are constantly engaged in a battle against disease, that public health authorities struggle against epidemics, and that the physician's armamentarium must constantly be supplied with weapons against disease, the term medical logistics is natural. It comes to the fore when vast quantities of medical supplies must be obtained quickly. The dramatic and successful attempt in the early 1940's to increase the production and use of penicillin was a problem in medical logistics. So is the present effort to provide a satisfactory vaccine and initiate a wide-scale vaccination program against paralytic poliomyelitis in 1955.

To fulfill the logistic requirements, a practical vaccine for the prevention of paralytic poliomyelitis must be [1] safe and pure; [2] potent—that is, of high enough antigenicity to invoke an adequate antibody response; [3] stable, so that the preparation can be manufactured, distributed, used, and stored without undue risk of degeneration or unfavorable modification; and [4] capable of being manufactured on a mass scale from readily available materials at a reasonable cost.

Mass manufacture must be possible because wide-scale use of the vaccine must be contemplated in the control of paralytic poliomyelitis. Epidemiologic findings reveal that during an epidemic, at least 100 people in the community harbor and excrete poliomyelitis virus for every one in whom a case of paralytic poliomyelitis is frankly diagnosed. Passive immunity is impractical [1] because it is temporary and [2] because an adequate supply of gamma globulin from pooled human blood could never be obtained.

The hope of preventing paralytic poliomyelitis with sera or vaccines was voiced soon after Landsteiner first demonstrated in 1908 that poliomyelitis—then called infantile paralysis—was a virus disease. Many false starts were made and fruitless leads followed. Lacking for a long time was fundamental knowledge of poliomyelitis as a disease that obeyed the laws of immunology. Brilliant and coordinated research eventually filled the gaps in knowledge and made it possible, in 1951, to begin work on a vaccine that would satisfy the logistic criteria already noted.

In 1949, a committee on poliomyelitis virus typing, supported by the National Foundation for Infantile Paralysis, undertook the task which demonstrated in 1951 that there are 3—and so far only 3—immunogenic types of poliomyelitis virus. That same year, 1954–Nobel Prize winners in medicine and physiology, Enders, Weller, and Robbins, discovered that poliomyelitis virus could be grown in tissue culture on non-nervous tissue. Earlier research had been hampered because it depended on an expensive supply of monkeys.

The rationale for protection against paralytic poliomyelitis by means of a vaccine was enhanced in demonstrations by Bodian and Horstmann that a stage of viremia

occurred in the course of clinical poliomyelitis infection and by Hammon that even barely detectable levels of circulating antibodies, supplied by passive immunization with gamma globulin, protected at least temporarily against paralytic poliomyelitis. Howe revealed that an inactivated poliomyelitis vaccine would raise antibody levels.

Salk soon prepared a trivalent, formalinized vaccine which gave favorable results in preliminary tests in the Pittsburgh area and warranted the full-scale field test in 1954.

The hard logistic fact about Salk's poliomyelitis vaccine is this: About three months is required to manufacture and test every batch.

Elaborate protocols for the manufacture of poliomyelitis vaccine have been established to assure its purity, safety, and potency. All steps are taken with extreme sterile precautions. Strains of each of the 3 known immunologic types of poliomyelitis virus are grown in tissue culture on minced monkey kidney. The virus is inactivated by the application of formalin, so that no measurable amount of virus activity remains. The formalin is neutralized with sodium bisulfite. The 3 vaccines are then pooled into a single trivalent vaccine, which is tested in animals and tissue cultures for safety and in monkeys for antigenicity. The final steps include sterile packaging in vials and labeling for distribution. Vials of vaccine must be kept under continuous refrigeration at 35 to 50° F.

Thus, the vaccine manufactured under current protocols is safe. This was experimentally and clinically established before the vaccine field trial began on April 26, 1954. It was further confirmed during the course of the trial, when each of approximately 440,000 school children received three 1-cc. doses of the vaccine. Adverse reactions were minimal. A very few children exhibited allergic skin reactions attributable to the traces of penicillin used in preserving the vaccine from bacterial contamination during manufacture and storage.

Time is a logistic factor in still another way in the application of the vaccine to a widespread program of vaccination against poliomyelitis. One to several months is necessary for the antigenic effect of the vaccine to be achieved. Dr. Salk has this matter of variability under careful study. The first vaccine inoculations, spaced a week apart, apparently do not measurably raise the titer of circulating poliomyelitis antibodies in individuals who have not previously developed some degree of antibody protection.

How protective against paralytic poliomyelitis these first sensitizing injections of vaccine may be cannot be definitely stated at this time. The theoretic probability is that they offer some protection. Hammon's extensive studies on gamma globulin demonstrated that barely detectable levels of circulating antibody offer temporary protection against paralytic involvement after virus invasion.

The evidence is clear and convincing, however, that what has now come to be called the booster shot of vaccine, given four weeks

or more after the sensitizing inoculations, usually brings about a rapid rise of circulating antibodies to significant detectable levels.

Again only observation and research will determine how long protective levels of circulating antibodies will endure and how often, if at all, additional booster shots must be given. However, this determination is not only a matter of clinical observation. A colony of vaccinated chimpanzees, whose response to poliomyelitis infection closely parallels man's, is being maintained at the Johns Hopkins University. It will be possible to challenge these animals with virus at intervals to obtain further information on how long measurable levels of circulating antibodies still retain the power to protect against paralytic poliomyelitis.

The role of naturally acquired poliomyelitis infection in relation to the administration of the Salk vaccine has been studied and deserves further attention. The present indication is that natural infection may serve in the role of either a sensitizing inoculation or a booster shot. If an individual, as a result of previous infection, already has developed some minimal critical level of antibodies against one or more types of poliomyelitis virus, the first inoculation of a trivalent vaccine may quickly raise his level of antibodies against all 3 viruses to a presumably protective level.

On the other hand, if virus infection is naturally acquired shortly after the first trivalent vaccine inoculation, this event may act as a fairly powerful booster shot and of itself speed the production of antibodies to the extent that central nervous system invasion and consequent paralysis do not occur. More study of this phenomenon is indicated; but its existence should be clinically recognized.

The evaluation of the poliomyelitis vaccine developed by Salk was planned with one primary question in mind: is it effective enough to warrant prompt widespread use in the initiation of a vaccination program? It was not expected that this or any other vaccine would be 100% effective; nor that it was the ultimate solution to the prevention of poliomyelitis. The 1954 vaccine field trial, which is the largest controlled medical experiment on record, was undertaken to get a quicker answer to the question of the effectiveness of the Salk vaccine than could possibly have been obtained in any other way.

Poliomyelitis is an erratic disease of unpredictable incidence and epidemic attack. It was therefore essential that the field trial include a large number of subjects and suitable controls in many parts of the country. Only thus could a statistically significant and reliable evaluation be made.

During the year 1954, approximately 440,000 children in the United States actually received vaccine and 220,000 were given placebo inoculations; 40,000 gave blood samples, and a total of 1,830,000 children and their families in 217 test areas in 44 states remained under continuous observation for the test year. Every reported case of poliomyelitis in the test population was

followed up not only to establish diagnosis but also to determine degree, if any, of residual paralysis. Degree of muscle paralysis was scored on muscle-gradings done by specially instructed physical therapists, under the direction of physicians, ten to twenty days and again fifty to seventy days after onset of the reported disease.

The accumulation, verification, and interpretation of this data by Dr. Francis and his associates permit us to speak with a high degree of certainty of the results of the 1954 field trial.

In interpreting Dr. Francis' reports it should be remembered that two distinct studies were involved in the evaluation. One study involved "observed control" test areas, where only children in the second grade received vaccine while children in the first and third grades served as "observed controls." The second study dealt with "placebo control" areas, where half the children in each of the first three grades received vaccine and the other half received placebo. This was a blind study. The vials were marked with codes so that only the Poliomyelitis Evaluation Center at the University of Michigan knew which children had received vaccine and which placebos.

It should also be recognized that improvements in technics and procedures for the manufacture of the Salk vaccine have naturally evolved since the first test vaccines were produced.

To assure the continued production and immediate availability in the spring of 1955 of a substantial supply of poliomyelitis vaccine, if it proved effective and was licensed for use, the National Foundation contracted in the fall of 1954 to purchase enough vaccine to vaccinate 9,000,000 individuals.

It is expected that additional vaccine, equivalent or greater in amount than that contracted for by the National Foundation, will be obtainable through usual commercial channels for use by private practitioners.

To be used or sold in the United States, the vaccine must first be licensed by the Laboratory of Biologics Control of the U. S. Public Health Service. The evaluation reports presented by Dr. Francis supply crucial evidence for licensing; but this is not the sole evidence with which the Public Health Service is concerned in fulfilling its legal responsibility to license the product as "safe, pure, and potent."

The National Foundation is offering its supply of 27,000,000 doses of vaccine to state health departments in amounts sufficient to provide for the vaccination of two specified groups of children: [1] those who participated in the 1954 field trial in 217 test areas but did not receive vaccine at that time; and [2] all children enrolled in the first and second grades of all public, parochial, and private schools in the continental United States, Hawaii, and Alaska during the spring term of 1955.

Advance planning for the initiation of a vaccine program in 1955, with the National Foundation supply of vaccine only, was done cooperatively with the medical and

health groups most concerned. On January 10, in New York City, a meeting of official representatives of the American Medical Association, American Academy of Pediatrics, American Public Health Association, Department of Health, Education, and Welfare, and the National Foundation for Infantile Paralysis formulated a set of basic policies to govern the 1955 vaccine program.

The gist of the policies is this: State health departments and state health officers have full administrative responsibility for planning and conducting vaccine programs in their respective states. Plans for the administration of vaccine to the groups of school children designated above are being worked out in cooperation with the state medical societies and state education officials. Plans vary from state to state.

State health officers have delegated to local health officers, or other physicians, the responsibility for planning and conducting vaccine programs in their own local communities. Local medical societies are being invited to share in the conduct of the program.

The cooperation of physicians is essential to any widespread vaccination program. Many must volunteer their services to give injections of vaccine to the children included in the school vaccination programs. Approximately 20,000 physicians in 217 test areas voluntarily cooperated in the 1954 field trials.

In addition to the vaccinations which may be given to first and second grade school children—a group in which risk of poliomyelitis is high and which is readily accessible for a planned vaccine program—physicians will undoubtedly be requested by many of their own patients and parents of patients to give them the Salk vaccine. Special consideration probably should be given to pregnant women and to infants between 6 and 18 months of age.

Vaccine for use in 1955 should be administered on the same dosage schedule that was followed in 1954, namely, 1 cc. of vaccine in each of three doses, given intramuscularly, the second inoculation one week after the first and the third inoculation four weeks after the second.

It is too early to predict the outcome of a widespread vaccination program against poliomyelitis. It is difficult to say how rapidly it can be accomplished, even with the machinery already set up to reach this goal. It took over one hundred years for smallpox vaccination to become a firmly established procedure and scores of years to make diphtheria immunization programs effective. Much yet remains to be learned about poliomyelitis vaccines, particularly the duration of immunity that they may produce.

If we make the assumptions—and I emphasize that this is a projection—that the available poliomyelitis vaccine is 90% effective in preventing paralytic poliomyelitis and that practically all of the 9,000,000 children eligible for the vaccine supplied by the National Foundation actually receive it this spring, then we can expect that the program will prevent about 4,000 to 4,500 cases of paralytic poliomyelitis this year. If the effect of

this year's vaccination endures for five years (again an assumption), the 1955 program will have prevented approximately 15,000 to 16,000 cases over that five-year period.

Based on the five-year average during 1950-54, the National Foundation vaccine program could reduce the attack rate of paralytic poliomyelitis about 15% in 1955.

The door to the control of poliomyelitis has been opened. It will henceforth be the responsibility of the medical profession and public health officials to make the efforts necessary to assure universal freedom from paralytic poliomyelitis.

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# Evaluation of Abdominal Pain

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*The pattern of abdominal pain can be determined by site, type, and sequence of distress, and diagnosis can usually be established by relation of this pattern to other findings.**

THE physician's evaluation of a patient with abdominal pain depends for accuracy upon knowledge of intraabdominal anatomy, the nervous pathways involved, and the characteristic reactions to disease in each structure under consideration. The examiner must realize that pain from hollow organs may be distributed quite differently from that arising in the peritoneum.

Discomfort due to irritation of the parietal peritoneum may be quite discrete in distribution, owing to the fact that the peritoneum is innervated by somatosensory nerves in dermatome arrangement. The colicky pain from distended viscera, which is mediated by the splanchnic system, is not so clearly localized. However, when peritoneal involvement supervenes, the pain may change in a characteristic way which the patient can describe if questioned closely.

Somatic, or peritoneal, pain is not conspicuous until perforation or infiltration from the viscus is advanced. The shift of pain may be in a characteristic direction, depending upon the dermatome involved. The patient's account of distress must be closely analyzed to follow the course of the visceral and somatic components.



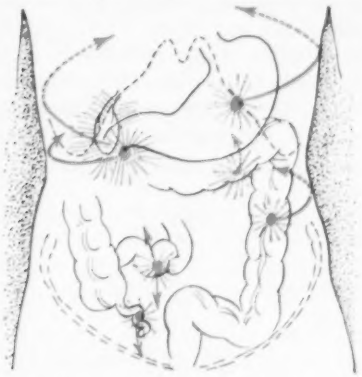
Splanchnic pain of lesions in hollow abdominal viscera tends to be referred to the midline.

Abdominal pain may be divided into 5 categories.

1] *Visceral pain alone* is best exemplified by the shallow duodenal ulcer and is described as a colicky or gnawing discomfort felt in the midepigastrium below the xiphoid process of the sternum. The discomfort is nonspecific and can be duplicated by pain from lesions in other organs.

*The pattern of pain in the diagnosis of upper abdominal disorders. J.A.M.A. 156:1566-1573, 1954.

2] *Summation pain* occurs at the peak of a bout of visceral pain and arises as maximal splanchnic stimuli spilling over into the corresponding dermatome. At the peak of a colicky cramp, the pain may shift to the right when the peritoneum



Projection of pain of perforating lesions of hollow abdominal viscera

near the gallbladder is involved or when a duodenal ulcer begins to penetrate. The direction of shift of the pain denotes the side of the abdomen in which the involved organ lies.

3] *Mixed visceral and somatic pain* is exemplified by a perforating ulcer, in which a steady and very severe pain replaces the previous intermittent discomfort. The somatic component shifts toward the involved side, and residual soreness in the distribution of the irritated somatosensory roots develops.

4] *Somatic pain alone* is responsible for atypical syndromes in which the original visceral pain is lost or is overshadowed by somatic distress. The patient with an impacted gallstone may be aware of interscapular pain only, and a person with a perforated ulcer may mention pain lateral to the previous discomfort and confuse diagnosis.

5] *Phrenic pain* is a variety of somatic pain. The left phrenic nerve originates in the third, fourth, and fifth cervical nerve roots and supplies sensory fibers to the ventral surface of the dome of the left hemidiaphragm. The right phrenic nerve similarly supplies the central dome and ventral surface of the right hemidiaphragm, the capsule of the liver, and, in a few patients, the lesser omental area.

Consideration of pain patterns of individual lesions in the upper part of the abdomen often provides a clue to the correct diagnosis. Dependence on roentgenologic and laboratory methods alone may result in an incorrect conclusion.

*Diaphragmatic hernia* may not be accompanied by severe visceral symptoms, but, if ulceration occurs, pain is referred to the somatic pathways, usually to the left thorax. Pain shifts to the left and upward.

*Gastric ulcer* near the cardia also causes pain in the chest, and, if perforation occurs, symptoms may predominate in the interscapular area. A lower penetration involving the pancreas leads to pain in the low back on the left. Likewise, perforation of a *duodenal ulcer* which involves the mesocolon causes a shift of pain downward and to the low back.

A *diseased gallbladder* may be asymptomatic or symptoms may duplicate those of other disorders in the upper abdominal viscera, such as peptic ulcer or pylorospasm.

Frequently, pain becomes severe and shifts to the right upper quadrant or right subscapular region in the eighth thoracic dermatome.

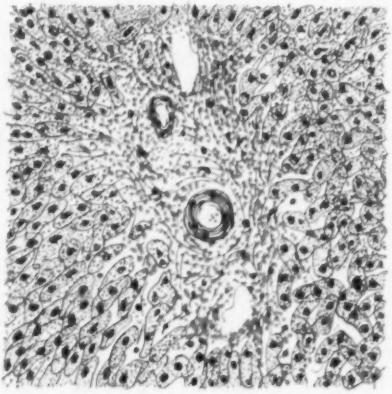
*Pancreatic pain* may have visceral components at first, but later the steady, severe pain from the parietal peritoneum will be distributed posteriorly as high as the tenth thoracic dermatome on the left or right, depending on whether the tail or head of the organ is involved.

*Gastrojejunal ulcer* may cause vague and atypical pain which shifts up and to the left as penetration occurs. If the mesocolon or pancreas becomes inflamed, pain moves downward and to the back. When gastroenterostomy is done posterior to the colon, complications may lead to pain as low as the suprapubic area. If perforation has allowed gastric contents to surround the colon, symptoms may suggest an irritable colon and pain is often relieved by a bowel movement. When the splenic region is involved, pain is referred to the left lower quadrant and the left paraspinal area.

## Jaundice Due to Chlorpromazine

JACOB ZATUCHNI, M.D., AND GLADYS MILLER, M.D., TEMPLE UNIVERSITY, PHILADELPHIA, report jaundice apparently caused by chlorpromazine.

Jaundice appeared on the fourteenth day of chlorpromazine therapy and persisted for forty days. Nausea and crampy abdominal pain were the principal symptoms; stools were clay colored. Physical examination was negative except for a palpable, nontender liver. Laboratory studies revealed hyperbilirubinemia, elevated alkaline phosphatase, slightly increased total cholesterol, and negative flocculation tests. Urinalysis showed bile and a trace of protein.



Exploratory laparotomy was done, and the biliary tree and pancreas appeared to be normal. Cellular infiltration of the portal area (see illustration) and slight parenchymal involvement were seen in liver biopsy. A cholangiogram was negative.

Chlorpromazine was discontinued when jaundice appeared. Another liver biopsy after jaundice subsided showed almost complete disappearance of infiltration.

Jaundice during chlorpromazine therapy. New England J. Med. 251:1003-1006, 1954.

# Kimmelstiel-Wilson Lesions in Diabetes

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*Hyaline nodular masses appearing in the glomeruli of the kidneys of some diabetic patients are morphologically distinct from the lesions of chronic glomerulonephritis.**

GLOMERULAR hyaline nodules, or Kimmelstiel-Wilson lesions, have been found in diabetic patients ranging in age from less than 15 years to over 60 years. Most patients with the lesions, however, are between 30 and 60 years old.

Diabetes mellitus apparently exists many years before the kidney nodules develop, because few patients have the lesions during the first six years after the onset of the disease. However, duration of diabetes is not the only factor; some patients have no kidney nodules even after twenty years of diabetes.

About 78% of diabetic patients with Kimmelstiel-Wilson nodules in the kidneys have capillary aneurysms of the retina. By ophthalmoscopic examination, these aneurysms often appear as multiple, deep, punctate hemorrhages. Histologic examination reveals focal dilatations of the capillaries in the bipolar cell layer of the retina. Exudates and hemorrhages, which may arise from other causes, are not considered diagnostic of retinitis unless accompanied by sharply circumscribed red spots.

Single findings of retinal aneurysm, hypertension, peripheral edema, or albuminuria do not set apart the diabetic patient with glomerular nodules from the patient without nodules. A combination of retinal aneurysms and peripheral edema or of peripheral edema, albuminuria, and hypertension is good evidence of Kimmelstiel-Wilson lesions, as neither combination is found commonly in the diabetic patient without kidney nodules.

Diabetic patients with glomerular nodules usually have some degree of coexistent arteriosclerotic and arteriolosclerotic nephritis, although glomerular nodulation may occur without significant arterial and arteriolar changes in the kidney. The exact role of arteriolosclerotic nephritis in the complete Kimmelstiel-Wilson syndrome of hypertension, albuminuria, peripheral edema, and capillary aneurysms of the retina is not yet established.

Diabetic patients with Kimmelstiel-Wilson lesions often have peripheral edema without cardiac involvement. Therefore, when edema occurs without congestion in the pulmonary or peripheral circulations, other components of the syndrome should be sought.

*The clinical features associated with Kimmelstiel-Wilson lesions. Bull. Johns Hopkins Hosp. 95:338-346, 1954.

# Therapy for Hyperthyroidism

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*Before undertaking the management of hyperthyroidism, the physician should understand the mode of action of each therapeutic agent.**

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THE most useful preparations for medically treating hyperthyroidism are iodine, the thiourea drugs, and radioactive iodine. Except for thyroiditis and in conjunction with surgery for thyroid cancer, x-ray therapy is generally outmoded.

*Iodine* is one of the essential building blocks for the thyroid hormone and is most useful for slight, early, primary hyperthyroidism. In relatively large doses, the drug also has an involuting action on the thyroid gland.

The usual dosage is 5 to 10 minims, three times daily, of Lugol's solution or saturated solution of potassium iodide. However, the action of the drug is variable and unpredictable, and the drug is rarely used alone. Iodine cannot control severe grades of hyperthyroidism and the gland frequently escapes the drug's influence. Iodine should not be given to patients sensitive to iodides or to those with tuberculosis.

The *thiourea drugs* include thiouracil, propylthiouracil, methylthiouracil, methimazole (Tapazole), and iodothiouracil (Itrumil). Propylthiouracil is preferred for most patients. The effective dosage of Tapazole is about one-twentieth that of propylthiouracil, but the drug has not been widely used as yet.

Thiourea drugs inhibit the enzyme system responsible for iodinization of tyrosine, thereby blocking synthesis of thyroxin. Increased secretion of thyrotropin causes hyperplasia and increased vascularity of the thyroid. These agents are slower acting than iodine, reducing the basal metabolism about 1% a day.

Long-term management with thiourea drugs is indicated for [1] exophthalmic goiter in very young and very old patients; [2] recurrent postoperative hyperthyroidism; [3] hyperthyroidism associated with cardiac disease; and [4] patients refusing operation when radioactive iodine is not available.

Treatment is done on an ambulatory basis. The initial dosage of propylthiouracil is between 300 and 600 mg. daily in divided doses every eight hours. This dosage is given until the basal metabolic rate is normal and all symptoms have subsided. A daily maintenance dose of 50 to 100 mg. daily is then given for three months. The dose is gradually decreased and discontinued when the patient is euthyroid. The total course usually lasts six to eighteen months.

About 50% of patients relapse

*The treatment of hyperthyroidism. M. Clin. North America 39:55-64, 1955.

after discontinuation of therapy. In such cases the physician may advise [1] repetition of therapy with propylthiouracil; [2] subtotal thyroidectomy; or [3] radioactive iodine. When surgery or radioactive iodine is impractical, long-continued use of minimal effective doses of antithyroid drugs may be justified if no idiosyncrasy appears.

Because sensitivity reactions are common, patients given thiourea drugs must be observed carefully. Agranulocytosis must be constantly anticipated. To counteract thyroid enlargement, 2 or 3 minims of Lugol's solution daily may be used in conjunction with antithyroid drugs when the basal metabolic rate approaches +15 to +20. The goal of antithyroid therapy should be a basal metabolic rate between +5 and +15 as hyperplasia and myxedema may occur below these levels.

To prepare patients for thyroidectomy, thiourea drugs are given in the same manner as for extended treatment. About one week before operation, 5 to 10 minims of Lugol's solution are added three times daily. With this regimen, many hazards of surgery may be avoided.

*Radioactive iodine* therapy may be used in an effort to trap and concentrate a sufficient quantity of radioactive isotopes to bring about an euthyroid state by inhibition and destruction of thyroid substance. Radioactive iodine is effective for almost all hyperthyroid patients, especially elderly persons with primary hyperthyroidism. The drug is preferred for patients who have had previous thyroid operations or for poor surgical risks when thiouracil drugs are not advisable.

Therapy is inexpensive, innocuous, and usually effective. Strict supervision and frequent blood counts are not mandatory. Unfortunately, however, the agent is not generally available. Use is restricted to large medical centers with specialized equipment and trained personnel.

The dosage usually employed is 100 to 200 μc. per gram of estimated thyroid weight. A preliminary tracer dose measuring uptake will help this determination. A waiting period of two to four weeks is necessary for persons recently treated with iodine or propylthiouracil.

Any medical approach to hyperthyroidism should be supplemented by good general supportive therapy, including a high-calorie, high-protein, high-carbohydrate diet, large doses of thiamin and other B-complex vitamins, slight sedation, and proper mental and physical rest.

¶ HEPATIC DISEASE IN ALCOHOLICS may be effectively treated by rest, dietary regulation, and abstinence from alcohol. The diet consists of 350 gm. of carbohydrate, 125 gm. of protein, 100 gm. of fat, and supplementary vitamins. With this regimen, Carroll M. Leevy, M.D., and associates of the Jersey City Medical Center find that evidence of fatty liver disease disappears and slight or moderate cirrhosis is stabilized.

*Quart. J. Stud. Alcohol 15:537-544, 1954.*

# Prognosis after Coronary Occlusion

ARTHUR M. MASTER, M.D., HARRY L. JAFFE, M.D., EUGENE M. TEICH, M.D., AND LOUIS BRINBERG, M.D.
*Mount Sinai Hospital, New York City*

*In most instances, the patient surviving coronary occlusion can return to work and lead a productive life for several years.**

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THE improved outlook for patients with coronary occlusion is related to advances in diagnosis and therapy. With increasing accuracy of diagnosis, slight and atypical attacks are more frequently discovered and therapy is begun earlier. Important principles of treatment include a low-calorie diet, administration of cardiac drugs when required, and the use of anticoagulants, vasopressor drugs, and antibiotics for selected patients.

The best guide to the degree of recovery and long-term prognosis is the condition of the patient after the attack. Symptoms and working capacity are more significant prognostically than cardiac enlargement, electrocardiographic changes, or prolonged sedimentation rates. Many patients completely or satisfactorily recover but have enlarged hearts, prominent electrocardiographic changes, and, occasionally, ventricular aneurysms. The patient in good general physical condition with normal heart size, electrocardiogram, and cardiac pulsations has the best prognosis. The outlook is somewhat better for young patients.

In view of the relatively good outlook for patients with coronary occlusion, return to a productive life by working is of considerable economical and psychologic importance. In certain instances, lighter work, vocational guidance, and selective job placement may be needed. Periodic examinations should be made to determine any need for job change.

A follow-up study was made of 500 patients surviving coronary occlusions for one to twenty-nine years. Over two-fifths of the patients made complete functional recoveries, and another two-fifths made satisfactory recoveries with only slight anginal pain or dyspnea with exertion. In the group making complete or satisfactory recoveries, most of the patients returned to work and more than half have survived more than five years; almost one-fifth have survived for more than ten years. Of the patients who died, 62% lived more than five years and 30% survived ten years or more, the average period of survival being almost eight years. Data from the group studied indicate that a patient making a complete recovery has a 95% chance of surviving for at least five years.

*Survival and rehabilitation after coronary occlusion. J.A.M.A. 156:1552-1556, 1954.

# Significance of Esophageal Diverticula

LT. COL. EDDY D. PALMER, M.C.
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*Management of other diseases may be hindered by esophageal diverticula, but the lesions are not of primary importance unless complications occur.**

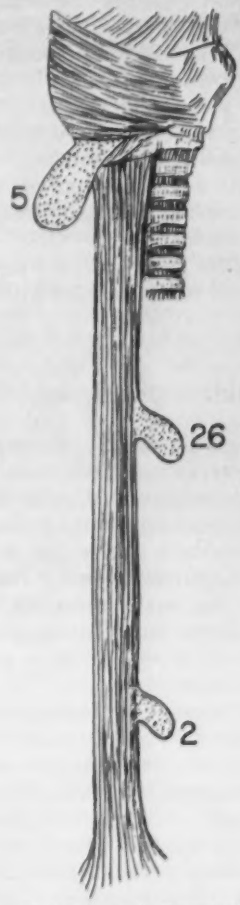
ASYMPTOMATIC esophageal diverticula frequently impede diagnosis and treatment of other diseases. The interference is not only time consuming, but is sometimes hazardous, especially if the patient has upper gastrointestinal hemorrhage.

Of 33 patients with esophageal or hypopharyngeal diverticula, 24 did not have symptoms. Half of the asymptomatic lesions hindered treatment of other diseases.

Nutrition of a comatose patient could not be maintained by gavage since the diverticulum prevented passage of the tube. Severe kyphosis precluded transesophagoscopic intubation.

Emergency therapy of persons with bleeding esophageal varices due to cirrhosis was obstructed because pneumatic tamponades could not be applied.

A midthoracic diverticulum prevented gastroscopic examination of a patient with carcinoma of the anterior stomach wall. Since laparotomy revealed a nonresectable tumor, instrumental study may have obviated an operation.




Sites of esophageal diverticula in 33 patients

*Clinical problems associated with esophageal diverticula. Am. J. M. Sc. 220:16-21, 1955.

In other instances, sources of bleeding could not be identified because diverticulum interfered with gastroscopic investigation.

Most of the patients with symptomatic esophageal diverticula seek medical care because of anterior chest pain. Pain may be aching and constant or sharp and paroxysmal; regurgitation and periodic singultus may also occur.

An epiphrenic, distal thoracic esophageal diverticulum may cause dysphagia and weight loss. A person with a midthoracic lesion may have repeated attacks of pneumonia and bronchitis.

Surgical intervention was necessary for 4 of the patients with symptomatic diverticula. In 2 instances, midthoracic lesions were amputated because of chronic pulmonary disease and 2 epiphrenic diverticula were removed to improve nutrition.

Diverticula are not of great importance unless a complication occurs. Chronic bronchopulmonary disease may be caused by periodic nocturnal aspiration. Cancer occasionally develops within a sac, and ectopic gastric mucosa or pancreatic tissue may ulcerate and bleed. Rarely, diverticulitis with stomal closure, abscess formation, and restricted rupture into the mediastinum occurs. Diverticula may cause esophagoaortic and esophagotracheal fistulas.

## Bacteremia from *Aerobacter Aerogenes*

WILLIAM J. MARTIN, M.D., JOHN A. SPITTEL, JR., M.D., DONALD R. NICHOLS, M.D., AND JOSEPH E. GERACI, M.D., MAYO CLINIC AND FOUNDATION, ROCHESTER, MINN., believe that streptomycin combined with tetracycline compounds may be effective therapy for bacteremia caused by *Aerobacter aerogenes*. Streptomycin, 1 gm. intramuscularly every twelve hours, and a tetracycline compound, 750 mg. orally every six hours, are given until 3 blood cultures are negative. Since infections usually subside within two weeks, toxic effects of streptomycin are not likely. However, good renal function is necessary.

The most common portals of entry of the pathogens, in order of frequency, are the urinary, intestinal, and biliary tracts. Of 20 patients studied, infection occurred in 12 after cutting or manipulative operations. All patients had temperatures of 101 to 106° F. Chills usually occurred with onset of infection. The usual shocklike condition preceding bacteremia was lacking. Prostration, sweating, headache, albuminuria, and leukocytosis were common. Severe anemia was not observed.

The pathogens were resistant to streptomycin alone in 3 patients, who subsequently expired.

Bacteremia caused by *Aerobacter aerogenes:* review of 20 cases. Proc. Staff Meet., Mayo Clin. 29:541-545, 1954.

# Treatment of Cardiac Arrhythmias

CHARLES D. ENSELBERG, M.D.
*Montefiore Hospital, New York City*

*Digitalis and quinidine are still the most important antiarrhythmic drugs.**

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ALTHOUGH not all cardiac arrhythmias require treatment, the physician should be aware of the benefits of antiarrhythmic drugs in the management of premature systoles, paroxysmal tachycardia, atrial flutter or fibrillation, and Adams-Stokes syndrome.

*Premature systoles*—Treatment is necessary only when the patient's awareness of the arrhythmia causes apprehension or when frequent extrasystoles are associated with heart disease. Sedation with barbiturates is frequently successful and quinidine may be effective regardless of the origin of the beats. Digitalis often abolishes premature beats.

*Paroxysmal tachycardia*—For supraventricular tachycardia, vagal stimulation by carotid sinus or eyeball pressure, Valsalva maneuvers, or induction of the gag reflex should be tried as initial treatment in every case. When these fail, digitalis, preferably in the form of a rapidly acting glycoside, may be administered parenterally; lanatoside C works well when given intramuscularly. Barbiturates and morphine are particularly effective. Methacholine is often useful but because of severe side effects should be reserved as a final measure. Prostigmin may enhance vagal sensitivity and thereby potentiate the effect of other vagus-stimulating drugs. Neosynephrine may be of value but must not be employed for hypertensive patients.

With ventricular tachycardia, the primary objective is to reduce the frequency rather than abolish all ectopic ventricular activity. Either quinidine orally or procaine amide intramuscularly may be effective. Digitalis should not be given except with congestive failure. Vasopressor drugs may be necessary to maintain blood pressure, especially when procaine amide or quinidine is used. Intravenous morphine occasionally stops the paroxysm within a few minutes.

*Atrial flutter*—Digitalis in large doses is preferred for this condition. Fractional doses are given at four- to eight-hour intervals until a therapeutic effect or distinct intoxication occurs. The immediate objective is to slow the ventricular rate regardless of the atrial mechanism. When this is accomplished, the digitalis dosage is adjusted to maintain the rate.

*Atrial fibrillation*—Digitalis often completely fails to slow the ventricular rate or abolish the arrhythmia, whereas quinidine may succeed

*Treatment of cardiac arrhythmias. Arch. Int. Med. 95:123-128, 1955.

quickly. If a rapidly acting digitalis glycoside given parenterally is not effective within an hour, quinidine treatment should be started at once. Quinidine is recommended for patients with lesser grades of heart disease, those seriously disturbed by awareness of the arrhythmia, and those with conditions difficult to control with digitalis.

*Adams-Stokes syndrome*—The actual mechanism that produces syncope is rarely apparent but may be due to extreme ventricular slowing, complete cardiac or ventricular standstill, ventricular tachycardia, or ventricular fibrillation. Rational treatment during a seizure is practically impossible. The attack is self-limited.

Drug treatment should be given in some cases of complete heart block in order to prevent Adams-Stokes attacks. Epinephrine, ephedrine, and Isuprel are often effective. Atropine is occasionally of value. Quinidine and procaine amide may be dangerous.

*Arrhythmias during anesthesia, surgery, and cardiac catheterization*—Specific therapy of arrhythmias is usually not required during anesthesia and surgery, since most abate spontaneously when proper pulmonary ventilation and satisfactory blood pressure levels are maintained. Antiarrhythmic drugs are disappointing when used to prevent arrhythmias during cardiac surgery or catheterization, apparently failing to stifle the effect of mechanical stimulation of the heart.

*Digitalis intoxication*—Occasionally, digitalis will produce toxic arrhythmias. Frequent multifocal ventricular premature systoles, ventricular tachycardia, atrial tachycardia, or atrial fibrillation may occur. Potassium should be administered if no renal failure exists.

## Colonic Changes from Chronic Purgation

F. C. JEWELL, M.D., DETROIT, AND JOHN R. KLINE, M.D., WICHITA, believe that extensive changes in the colon may occur as a result of excessive and prolonged use of irritant cathartics containing aloin and podophyllum. Roentgenographic alterations may be mistaken for old ulcerative colitis.

The syndrome apparently begins on the right side of the colon and occasionally involves the left side. Roentgen findings include dilatation and atonicity of the right side of the colon, disappearance of the usual mucous membrane pattern, shortening of the hepatic flexure, and widening of the terminal ileum.

The colonic mucosa is continually edematous. Fibrosis of the submucosa may result in permanent mucosal change. Constant stimulation of the musculature causes loss of muscle tone with dilatation and atonicity. Hyperirritability in the musculature, presumably from aloin, may be reflected in isolated spasm.

The purged colon. Radiology 62:368-370, 1954.

# Cortisone for Rheumatoid Arthritis

JOSEPH J. BUNIM, M.D., MORRIS ZIFF, M.D., AND CURRIER MC EWEN, M.D.
*New York University, New York City*

*Symptoms of rheumatoid arthritis may be relieved and function greatly improved by cortisone, although the underlying disease apparently continues unchanged.**

TREATMENT with cortisone is most effective in patients with severe, rapidly progressing rheumatic disease of relatively recent onset. The drug may also be useful when other agents fail or cause unbearable reactions.

As a rule, daily maintenance doses of 100 mg. or less can be tolerated for several years without development of a refractory state or evidence of adrenocortical insufficiency. Prolonged therapy may induce grave complications, however, and relapse often occurs after withdrawal.

Effects of cortisone were analyzed in 71 patients with rheumatoid arthritis observed during a period of four years. Treatment continued without interruption for six months to three and a half years or more. Duration of illness before steroid therapy varied from less than a year in 26% of patients to more than ten years in 33%.

Daily maintenance dosage was 25 to 100 mg. after the first year of trial, because administration of 110 to 175 mg. in 3 patients produced gastric or duodenal ulcer in all and perforation in 2.

At the end of four years, 28% of the arthritic group were much improved, 23% were in remission, and the remainder were benefited little. Remissions persisted during observation for a year or more after withdrawal of the drug. Gains were outstanding with pretreatment illness that had not exceeded a year and least with illness of more than ten years' duration.

The greatest benefit of cortisone or hydrocortisone was frequent relief of discomfort, especially in the first few months of medication. Rehabilitation was hastened, and many helpless invalids were transformed into useful citizens.

Functional status of 58 subjects was graded in detail before and after therapy. Of 17 initially bedridden patients, 13 were able to walk without aid and only 2 remained in bed. Of 31 persons who were formerly unable to care for personal needs, 25 became self-sufficient.

Before treatment, 45 individuals were totally unemployed and 7 were working full time. After therapy, 32 were fully occupied, and

*Cortisone therapy in rheumatoid arthritis: a four-year appraisal. Bull. Rheumat. Dis. 5:73-74, 1955.

the idle group was reduced to only 11 persons.

The group included 8 children, most of whom were physically underdeveloped; 5 of the children were totally incapacitated and bedfast before cortisone therapy. Eventually, all were ambulatory and attended school, and 4 had standard weights and 5 normal heights. However, relapse with systemic manifestations was frequently seen during constant and apparently adequate therapy.

Serial radiograms of joints were obtained in 20 patients selected at random; 14 had some previous destruction of subchondral bone and 6 had no visible damage. Lesions diminished in only 1 instance and increased in 8. Moreover, joints became involved in all subjects during therapy despite both subjective and objective improvement.

Undesirable reactions to cortisone were fairly common. Women were more susceptible to hirsutism, fat deposits, mental depression, and bone fracture than men but also recovered more often from side effects. All reactions, excepting fractures and perforated ulcers, subsided when cortisone therapy was discontinued.

## Benemid Treatment for Gout

ELMER C. BARTELS, M.D., LAHEY CLINIC, BOSTON, states that Benemid prevents attacks of gout and relieves joint pains of patients with tophaceous gout.

At the beginning of treatment, 1,000 to 2,000 mg. of the uricosuric agent is administered each day in 2 doses. The serum uric acid level is determined at one- to two-month intervals and dosage is adjusted. Daily maintenance doses range from 250 to 3,000 mg. High fluid intake and alkalinization of the urine are advisable during the early phase of therapy.

Attacks may recur during the first six to nine months of treatment, but, if administration of Benemid is continued and the serum uric acid level is maintained at normal, the attacks become less severe and ultimately stop. Acute attacks may be controlled by oral administration of colchicine, intramuscular injections of ACTH gel, or intrabursal or intraarticular injection of Hydrocortone.

Results were satisfactory for 39 of 42 patients who received Benemid for twelve to thirty months. Of the 3 treatment failures, 2 have not had attacks since Benemid therapy was supplemented with injection of ACTH gel every one to four weeks.

Side effects including fever, urticarial rash, severe nausea, and headache necessitated discontinuance of Benemid treatment among 5% of 125 patients. Though never severe, urinary frequency was also noted often.

Gout-now amenable to control. Ann. Int. Med. 42:1-10, 1955.

# Abnormal Hemoglobin Combinations

JOHN S. LAWRENCE, M.D., AND WILLIAM N. VALENTINE, M.D.
*University of California Medical Center, Los Angeles*

*At least 4 forms of sickle-cell anemia occur; 3 are heterozygous, 1 is homozygous.**

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UNEXPLAINED anemia in patients of Negro or Mediterranean extraction should suggest sickle-cell disease, particularly when target cells, nucleated red cells, jaundice, and reticulocytosis are also noted. Detailed chemical and electrophoretic studies are required to determine the type of disorder.

At present, normal (A), fetal (F), sickle-cell (S), C, and D hemoglobins are identifiable. The fetal type is found in some anemias but since this can be accounted for by reversion to a normal embryonic process, fetal hemoglobin is not considered an inherited abnormal hemoglobin. Types S, C, and D, however, are abnormal. The hemoglobin found in patients with thalassemia (T) may be normal, as electrophoretically the behavior is identical with that of hemoglobin A.

Hemoglobins A, C, and S are readily distinguishable from one another, S occupying an intermediate position of mobility between A and C. Hemoglobin D has the same electrophoretic mobility as S but can be distinguished because [1] its presence does not make the red cell capable of sickling and [2] the solubility is high while that of S is low.

The 4 distinct types of sickle-cell disorders may be demonstrated on a genetic basis. Disease may result when a person with a sickling gene also has one of the following:

- Another sickling gene
- The gene responsible for thalassemia
- The gene responsible for hemoglobin C
- The gene responsible for hemoglobin D.

Homozygous sickle-cell disease is apparently the most severe form. The patient may have dyspnea, easy fatigability, fever, jaundice, and periods of hemolytic crisis. Large numbers of sickled red cells appear in a direct blood smear. Nucleated red cells and reticulocytosis are also common.

A patient with sickle-cell–hemoglobin C may exhibit splenomegaly, sickling, target cells, and electrophoretic findings of S-C hemoglobins. The course of the disease is usually more benign than that of the homozygous S form.

With homozygous hemoglobin C, nucleated erythrocytes may be observed in the peripheral blood. Target cells occur in large numbers. Slight reticulocytosis and splenomegaly may be found.

Combinations C-D, C-T, D-D, and D-T have not been reported.

*Abnormal hemoglobins. California Med. 82:1-5, 1955.

# Carotid Sinus Stimulation

VICTOR ALZAMORA-CASTRO, M.D., GUIDO BATTILANA, M.D., GUILLERMO GARRIDO-LECCA, M.D., CARLOS RUBIO, M.D., RICARDO ABUGATTAS, M.D., AND JOSÉ BOURONCLE, M.D.
*Hospital Dos de Mayo and University of San Marcos, Lima, Peru*

*Stimulation of the carotid sinus reflex often has a beneficial effect on the cardiac status.**

In hypertensive patients with pulmonary edema or cardiac asthma, massage of the carotid sinus may produce a drop in pulse rate and blood pressure with rapid relief of symptoms.

The carotid sinus region is stimulated by unilateral massage with the thumb under the anterior border of the sternocleidomastoid muscle (see illustration).

Pressure sometimes may be continued for as long as half an hour. If the reflex becomes exhausted on one side, a good response often may be obtained on the opposite side. Reaction is considered effective when cardiac rate and blood pressure decrease to normal.



During the procedure, blood pressure should be measured at frequent intervals and the intensity of massage controlled by auscultation of the heart. Pronounced bradycardia and hypotension are thus avoided.

Improvement ordinarily coincides with the appearance of bradycardia and drop in blood pressure and persists as long as carotid sinus stimulation is maintained. When massage is discontinued, the pulse rate and blood pressure may rise but not to original levels. During stimulation, the electrocardiogram may remain unchanged or show such variations as decreased RS-T depression or alterations in the polarity of the T waves in some leads.

When the signs and symptoms of acute left ventricular failure are controlled by this method, patients who have been receiving digitalis are given additional amounts orally. Those who have never been digitalized are given ouabain or digitalis by mouth if symptoms do not reappear or are slight enough after stimulation to allow such therapy.

*Acute left ventricular failure and carotid sinus stimulation. J.A.M.A. 157:226-229, 1955.

Patients who are relieved by carotid sinus stimulation usually have normal sinus rhythms. A favorable response may not be obtained in patients with auricular flutter or fibrillation or in those individuals with aortic insufficiency who have defective carotid sinus reflexes.

Relief of symptoms by carotid sinus stimulation may be a result of multiple factors. The carotid sinus reflex may directly improve the intrinsic condition of the failing heart, as reflected by the changes in the T waves, or modify favorably the adverse circulatory state. Reduction in peripheral resistance by vasodilatation may relieve acute left ventricular insufficiency. Bradycardia produced by the carotid sinus reflex apparently permits improved filling in diastole and better initial length of the cardiac fiber.

¶ ANGINA PECTORIS is effectively treated with cinchona alkaloids. Although quinine is less expensive and toxic than quinidine, Joseph E. F. Riseman, M.D., Lester A. Steinberg, M.D., and George E. Altman, M.D., of Beth Israel Hospital and Harvard University, Boston, find that the latter drug is somewhat more efficacious. Vasodilator action of the quinoline ring is probably responsible for the therapeutic activity.

*Circulation 10:809-823, 1954.*

¶ SOLITARY NONTOXIC THYROID NODULES may be found 5 times as frequently among women as among men in a nongoitrous area. John B. Vander, M.D., Eugene A. Gaston, M.D., and Thomas R. Dawber, M.D., of the National Cancer Institute and Union Hospital, Framingham, Mass., find that such growths existed in 159, or 3%, of 5,234 persons observed during a period of five years. None of 28 tumors excised was malignant, and no cancer has been found in patients not operated on.

*New England J. Med. 251:970-972, 1954.*

¶ ACUTE ATTACKS OF GOUT are aborted by phenylbutazone (Butazolidin) before the serum content of the drug is high enough to have a uricosuric effect. E. R. Huffman, M.D., and associates of the University of Colorado and Veterans Administration Hospital, Denver, observe that the decrease in serum uric acid accompanying the urinary excretion of urates occurs when concentration of the drug exceeds 10 mg. per cent. The highest level of the medicament is reached between the sixth and eighth days of therapy with daily doses of more than 600 mg.

*Ann. Rheumat. Dis. 13:317-323, 1954.*

# Value of Pleural Effusion Studies

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*Mayo Foundation, Rochester, Minn.*

*Bacteriologic studies, multiple examinations for malignant cells, and determination of protein content are the most valuable procedures for establishing the etiology of fluid accumulation in the pleural space.**

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MALIGNANT neoplasm produced the pleural effusions of about half of 436 patients who had one or more thoracenteses. Other causes in the order of frequency are congestive heart failure, infections, and miscellaneous lesions including intra- and extrathoracic and systemic disease.

The most common neoplastic causes of effusion in order of frequency are bronchogenic carcinoma, cancer of the breast, and lymphoma and leukemia. An effusion may be on the side opposite a primary tumor of the breast, and bilateral effusion sometimes exists.

Tuberculosis is the most frequent infection producing fluid accumulation. Empyema, coccidioidomycosis, and histoplasmosis are also seen.

Miscellaneous causes of pleural effusion include pulmonary infarction, cirrhosis of the liver, postpneumonic serous effusion, trauma to the thorax, idiopathic pleuropericarditis, subdiaphragmatic abscess, lupus erythematosus, spontaneous hemopneumothorax, Meigs's syndrome, and chronic nephritis with nephrosis.

Detection of malignant cells in pleural fluid may be the only histologic proof of diagnosis. Repeated examination is essential since cancer cells may not be noted in the first specimen.

About half of the fluid accumulations due to bronchogenic carcinoma or cancer of the breast but only an eighth of the fluids caused by lymphomas contain malignant cells. The cells are not always noted because, in some instances, the effusion is secondary to obstructive pneumonitis.

In the diagnosis of tuberculous pleurisy with effusion, culture for acid-fast bacilli and guinea pig inoculation are of about equal value.

Determination of protein content of the fluid is more accurate than the specific gravity in differentiating between transudates and exudates. With neoplasm and tuberculosis, the fluid generally contains 3 gm. or more of protein per 100 cc. The level is usually less than 3 gm. among individuals with congestive heart failure.

Contrary to previous reports, whether the fluid is bloody or not does not help determine the cause of the fluid, nor is detection of malignant cells more difficult in bloody than in nonbloody specimens.

*Pleural effusion. New England J. Med. 252:79-83, 1955.

# Choline Theophyllinate Therapy

ROBERT C. BATTERMAN, M.D., ARTHUR J. GROSSMAN, M.D., JULIUS SCHWIMMER, M.D., AND ALAN L. BLACKMAN, M.D.
*New York Medical College, New York City*

*Gastrointestinal absorption is predictable and adequate, toxicity is low, and resistance does not develop when choline theophyllinate is administered for angina pectoris or heart failure.**

DISADVANTAGES of xanthine therapy are eliminated or reduced when choline theophyllinate (Choledyl) is used. While aminophylline, the xanthine derivative generally used, may be effective parenterally, oral or rectal therapy is unsatisfactory. Adequate blood levels are difficult to attain because absorption is unpredictable and destruction in the liver is frequent. Gastrointestinal irritation often occurs, and repeated administration of the drug induces tolerance.

In comparison with aminophylline, theophyllinate blood levels are up to 75% higher the first two hours and 50% higher the third and fourth hours after Choledyl is administered. Any untoward reactions, such as nausea and increased bowel movements, are slight and occur in only about 7% of patients. The drug has been administered for seventeen months without loss of effect.

The most satisfactory oral dose is 200 mg. three or four times daily.

Choline theophyllinate may eliminate the need for mercurial diuretics. Since excessive diuresis may cause irreversible renal damage and untoward reactions, less potent preparations, such as the xanthines, should be substituted for mercurial diuretics when cardiac decompensation is slight.

When heart failure is severe, choline theophyllinate alone may be inadequate, but the drug potentiates the effect of mercurials and reduces the number of injections necessary. Patients who are refractory to diuretics may respond when the xanthine derivative supplements therapy.

Choledyl reduced the mercurial requirements of 28 of 45 individuals with cardiac decompensation by at least one-half; mercurial therapy was eliminated for 7 and used infrequently for 10.

Relief of angina pectoris is satisfactory among most patients who receive choline theophyllinate. Glyceryl trinitrate consumption is sharply curtailed. Among 32 patients, pain of 9 was completely eliminated and therapy with glyceryl trinitrate was necessary only infrequently for 6 and reduced by at least one-half for 8.

*Treatment of congestive heart failure and anginal syndrome with choline theophyllinate. J.A.M.A. 157:234-237, 1955.

# Operative Blood Loss Determinations

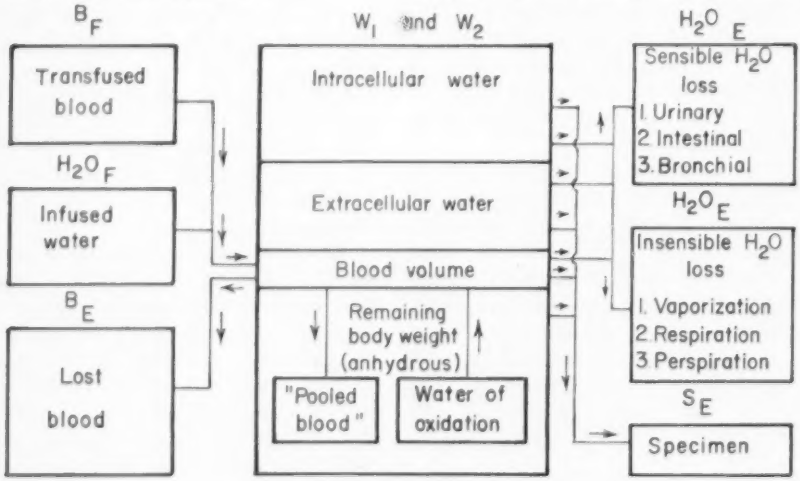
ALBERT J. PAQUIN, JR., M.D., VICTOR F. MARSHALL, M.D., AND BERNARD NATHANSON, M.D.
*Cornell University and New York Hospital, New York City*

*Postoperative blood requirements can be calculated by weighing the patient before and after surgery and accounting for substances added or removed during the operation.**

EXTENSIVE surgery necessitates an accurate and simple method for estimating blood loss. After a long, difficult cancer operation, blood replacement may be several times greater than the preoperative circulating blood volume. Convalescence is hazardous if transfusion is excessive or inadequate.

Blood loss can be determined directly by weighing sponges, drapes, towels, and all items that contain blood lost by the patient, but the method requires an elaborate bookkeeping system and full attention of one doctor. Errors due to evaporation are hard to avoid.

An alternative system, the body weight technic, is simple, reliable, and prompt. The preoperative ($W_1$) and the postoperative ($W_2$) body weights are determined; the weight of the specimen ($S_e$) is measured; the volume of blood ($B_f$) and water ($H_2O_f$) given during the operation




Causes of change in body weight during surgery

*Studies on a practical method for the determination of operative blood loss. Ann. Surg. 141:53-61, 1955.

is recorded; and insensible losses of body water ($H_2O_e$) are calculated at the arbitrary rate of 0.75 gm. per kilogram per hour.

Blood loss is computed as:

$B_e = (W_1 - W_2) + (H_2O_f - H_2O_e) + (B_f + S_e)$

To determine whether additional transfused blood is necessary, the value for $B_e$ is compared with the amount of blood that has been administered. Mechanism of body weight change during surgery is shown in the illustration.

The 2 methods for determining blood loss were compared in 20 patients. The difference between values obtained when loss is measured directly and when blood outflow is calculated by the body weight method is within the limits of physiologic tolerance for adults.

However, the body weight method is not accurate when extensive pelvic surgery is done. Radical cystectomy and pelvic exenteration produce large weeping areas that are partially filled with blood and plasma. The pooled blood is not available to the general circulation and should be considered as blood loss but is included in total body weight. The value of pooled blood should be estimated. Urinary loss during radical pelvic surgery is also difficult to measure.

The body weight method does not show the rate of blood loss. Information concerning blood loss is not available during the operation.

## Screening for Cervical Carcinoma

ALEXANDER BRUNSCHWIG, M.D., MEMORIAL CENTER FOR CANCER AND ALLIED DISEASES, NEW YORK CITY, believes that mass screening for carcinoma of the cervix is feasible when vaginal tampons are used. Since the tampon can be inserted and removed by the patient and smeared by a technician, the screening method does not require services of a physician to secure material for cytologic study. Extensive facilities for examination are not necessary, and little time of patients or professional personnel is required.

The vaginal tampon consists of a cylindric core of cotton encased in a sheath of nonabsorbent nylon. The tampon should be inserted before retiring at night and removed the next day after the patient arrives at the detection center. Smears are obtained by stamping the distal end of the tampon upon a glass slide while exerting pressure with the thumb and index finger on the sides of the tampon. Gross material on the sides of the tampon is also pressed on the slide.

Smears of 97% of 130 women with known carcinoma of the cervix were positive or indicated that the patient should be reexamined. Among 130 women with noncancerous uteri, 112 negative and 18 equivocal results were obtained.

A method for mass screening for cytological detection of carcinoma of the cervix uteri. Cancer 7:1182-1184, 1954.

# Surgical Therapy of Hemopneumothorax

WESLEY FRY, M.D., WILLIAM L. ROGERS, M.D., GERALD L. CRENSHAW, M.D., AND HARRY C. BARTON, M.D.
*U. S. Naval Hospital, Oakland, Calif.*

*Primary thoracotomy should be performed for severe or persistent spontaneous idiopathic hemopneumothorax.**

SPONTANEOUS idiopathic hemopneumothorax occurs almost exclusively among white males between the ages of 17 and 32.

Pneumothorax generally precedes hemorrhage, but bleeding may happen simultaneously with escape of air into the chest. Nontraumatic pneumothorax is usually caused by perforation of a subpleural vesicle; the source of associated severe hemorrhage is variable but is most often from a torn pleural adhesion containing blood vessels.

Chest pain, dyspnea, and shock are the most frequent symptoms. When pain is slight at the onset, a remission may occur before discomfort becomes severe. Pain may extend to the abdomen and seem to be a sign of an acute surgical abdominal emergency. Signs and symptoms of intrapleural tension are frequent, with a mediastinal shift toward the involved side. Blood loss may be over 5,000 cc.

Soon after the onset of intrapleural hemorrhage, the cell count of blood aspirated from the pleura



is about equal to the count of circulating blood. As time elapses, the blood in the pleura is diluted by effusion from the surface of the pleura.

When a diagnostic chest aspiration produces blood that does not clot, hemorrhage into the pleura has ceased or is slow. If the blood clots, bleeding is still actively continuing.

The mortality rate is approximately 12%. The morbidity is great because of the formation of fibrothorax and subsequent interference with pulmonary function (see illustration). Approximately two months is usually required for expansion of the lung after removal of the blood.

Nonintervention is to be condemned. The removal of blood is

*The surgical treatment of spontaneous idiopathic hemopneumothorax. Am. Rev. Tuberc. 71:30-48, 1955.

the best prophylaxis against incarcerated lung and fibrothorax. Early aspiration may be successful. If thoracostomy and tube drainage are employed, a simple underwater seal should be used. If bleeding is severe, thoracostomy may only delay the needed thoracotomy.

Primary thoracotomy is sometimes mandatory as a lifesaving measure and may also be done to decrease morbidity. Surgical intervention is recommended for initial severe hemopneumothorax or continued hemorrhage as shown by refilling of the pleural space after evacuation, severe shock, and deteriorating condition of the patient.

Blood transfusions, oxygen inhalation, and other support are important. Air must be aspirated and air pressure neutralized when tension pneumothorax occurs.

For late sequelae of hemopneumothorax when the lung does not expand because of rapid defibrination of the pleural blood or because blood was not adequately removed from the pleural space, the fibrous envelope that incarcerates the lung must be decorticated. Sometimes the film on the parietal pleura and diaphragm must also be removed to allow the chest to expand normally.

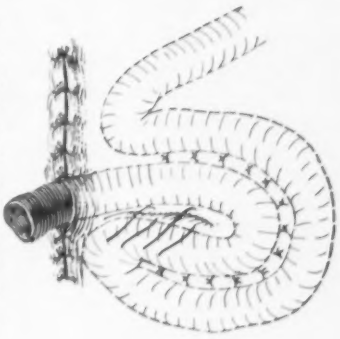
A trial with fibrinolytic enzymes may obviate decortication. Streptokinase and streptodornase should not be used if blood is in the thorax or a bronchopleural fistula is noted.

Since recurrence of hemopneumothorax is rare, use of powders, silver nitrate instillations, and other methods to produce pleural symphysis is probably unnecessary.

## Recurrent Ileostomy Prolapse

IRVING L. LICHTENSTEIN, M.D., AND SAM S. HERZIKOFF, M.D., CEDARS OF LEBANON HOSPITAL, LOS ANGELES, describe a surgical technic for repairing recurrent ileostomy prolapse without revising the stoma or site.

The procedure consists of plication of 60 cm. of the terminal ileum. Short loops of ileum 15 cm. long are sutured side by side with interrupted sutures placed in the mesentery proximal to the mesenteric attachment to the bowel (see illustration). Thus the terminal limb of the ileostomy is held firmly in place.



The method was successfully used in 1 patient in whom 3 previous attempts at repair with standard technics had failed.

Recurrent ileostomy prolapse—an old problem. Ann. Surg. 141:95-97, 1955.

# Mesenteric Vascular Occlusion

W. ROSS MORRIS, M.D.
*George Washington University, Washington, D.C.*

*Immediate surgical intervention is necessary when tentative diagnosis of occlusion of the mesenteric vessels is made.**

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ONE of the most critical and baffling of all abdominal emergencies is mesenteric vascular occlusion. The mortality rate is high. A correct preoperative diagnosis is difficult, and the condition is grave even when surgical resection has been accomplished. However, modern supportive therapy improves the outlook.

A mesenteric vascular occlusion may be either arterial or venous, and differentiation is usually impossible. Hemorrhagic infarction results whether the occlusion occurs in an artery or in a vein. The superior mesenteric vessels are most commonly involved. Persons between 30 and 70 years of age are most often affected. Etiologic factors include rheumatic heart disease or auricular fibrillation, arteriosclerosis, infections associated with thrombophlebitis, blood dyscrasias, trauma to the mesenteric vessels, portal vein stasis, and thromboangiitis obliterans.

When the patient is examined, shock is usually more pronounced than with other abdominal conditions. Physical findings include abdominal tenderness, rigidity, distention, and lack of peristalsis, depending upon the duration and extent of the process. The leukocyte count is usually increased.

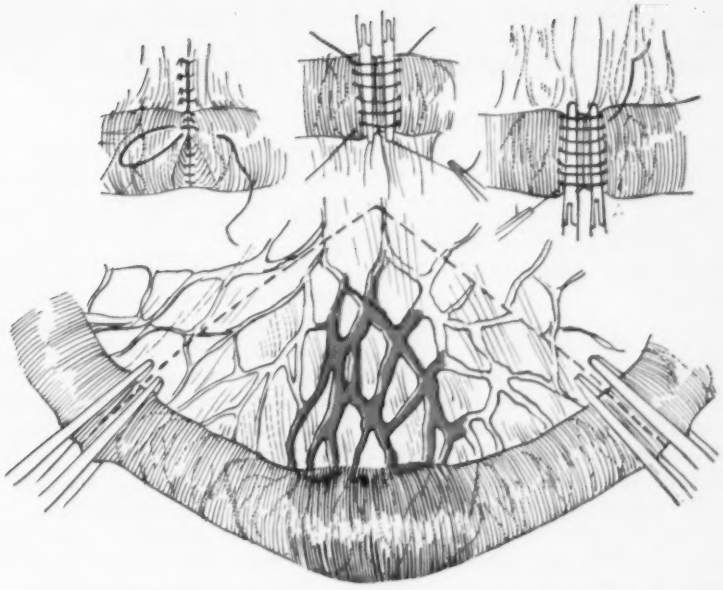
When arteriosclerosis is the etiologic factor, the progressive narrowing of the mesenteric arteries may lead to intermittent intestinal claudication. Aching, gnawing abdominal pain usually begins an hour or two after meals and lasts during the intestinal activity of digestion. A patient seen in such a stage may be termed a hypochondriac, since no abnormality is detectable. As arterial narrowing increases, thrombosis may precipitate an acute abdominal crisis.

The variable symptoms and findings often lead to an erroneous diagnosis, such as intestinal obstruction, cholecystitis, or irritable bowel syndrome.

Prognosis is poor even though the condition may be recognized and treated early. At times, the condition of the patient is so serious that surgical intervention is not possible. Even if operation is feasible, involvement may be so extensive that adequate bowel resection cannot be done with any hope of survival of the patient.

In the past, the mortality rate after surgery varied from 61 to 70%; the rate was about 95%

*Mesenteric vascular occlusion. M. Ann. District of Columbia 24:12-16, 1955.



Resection and anastomosis; occluded vessels are shown in color.

when operation was not done. In recent years, however, improvement in the methods of therapy has greatly reduced the mortality rate.

Treatment depends upon the general condition of the patient and the severity of the lesion. As soon as vascular occlusion is suspected, laparotomy should be performed if the patient is able to withstand the operation. The infarcted segment of intestine and mesentery is resected, and a primary intestinal anastomosis is done (see illustration).

Enterostomy or cecostomy is a futile procedure. Resection of questionably viable bowel is essential; a very long length of bowel may be removed and the patient still survive.

In recent years, antispasmodics and anticoagulants have been used in association with surgery with benefit. Papaverine often releases concomitant vasospasm. Heparin and dicumarol seem to help prevent extension of the infarction after resection.

Other important therapeutic factors include careful control of fluid and electrolyte balance, maintenance of nutritional and vitamin requirements, intestinal decompression with intubation and suction, antibiotics, careful anesthesia, and whole blood transfusions as needed. With extensive vascular occlusion, loss of blood into the bowel lumen and affected bowel wall and mesentery is severe. In such instances, transfusion is imperative.

# Sympathectomy in Obliterative Disease

GERALD H. PRATT, M.D.
*New York University, New York City*

*Judiciously applied, sympathectomy is an excellent ancillary measure for patients with obliterative vascular disease.**

DEPOSIT of a plaque or clot upon the wall of a blood vessel may constitute sufficient trauma to initiate spasm in the vessels of a patient with occlusive arterial disease. If the spasm is great, the blood stream will be slowed sufficiently to permit clotting, especially when the lumen is narrowed or the blood stream secondarily slowed. Thus obliterative disease may be responsible for a self-perpetuating reflex cycle. Interruption of this cycle before final clotting occurs is essential.

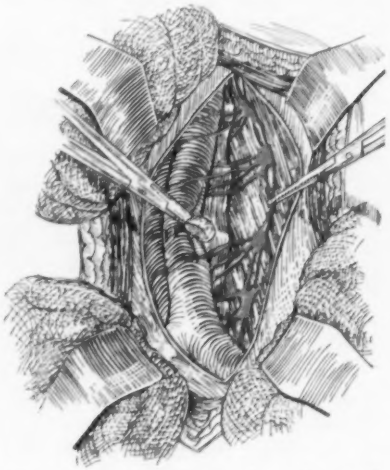
Conservative management of occlusive arterial disease consists of [1] protection of the skin from trauma; [2] stimulation of collateral circulation by warm baths, postural changes, and similar measures; [3] avoidance of constricting or spastic elements, including tight bandages, tobacco, and ergot drugs; and [4] the use of anticoagulants.

Surgical therapy may be direct or indirect. Attempts have been made to release segmental arterial blocks with bypasses or bridges. To perform this operation, which has not been perfected, an open vessel distal to the block is necessary.

Sympathectomy—release of vasoconstriction by interrupting the sympathetic fibers—is recommended when:

- Gangrene does not exist.
- The operation is not employed to replace the basic medical management.
- The patient is a fair surgical risk.
- The patient stops smoking.
- All other corrective measures for the underlying disease are taken.

To be successful, lumbar sympathectomy must be complete, including all of the lumbar ganglia and each nerve filament making up



*Amputation after surgical sympathectomy for obliterative vascular disease. Surg., Gynec. & Obst. 100:43-50, 1955.

the plexus (see illustration). Spinal anesthesia is preferred and should not be supplemented with Pentothal or other general anesthetics.

Poor results from sympathectomy usually occur when the operation failed to accomplish complete denervation. Pain at rest is a dangerous symptom. With active gangrene, amputation is usually necessary for 2 of every 3 patients despite sympathectomy. Postoperative gangrene occurs because [1] the disease was already irreversible or [2] surgical trauma caused an occlusion.

Only 5% of patients with symptoms of claudication and coldness lose a leg after sympathectomy. Of those with open lesions, 1 of 3 may require amputation.

¶ URINARY TRACT INFECTIONS may be successfully treated with Gantrisin acetyl, a compound derived from sulfisoxazole by acetylization at the $N^1$ position. Robert G. Marks, M.D., Lawrence Ravich, M.D., and Seymour F. Wilhelm, M.D., of Beth Israel Hospital, New York City, report that the drug is most effective in ambulatory patients infected with *Bacillus proteus, B. coli,* and coliform organisms. These pathogens were eradicated in 21 of 34 patients. The agent is tasteless and can be administered in liquid form to children and adults unable to swallow tablets.

*J. Urol. 73:179-181, 1955.*

¶ ACUTE AND CHRONIC URINARY INFECTION may often be successfully treated with nitrofurantoin (Furadantin). With a dosage of 100 to 150 mg. four times a day, Howard B. Hasen, M.D., and Thomas D. Moore, M.D., of the University of Tennessee and Baptist Memorial Hospital, Memphis, find that the medicament is especially effective when the causative organism is *Proteus vulgaris, Klebsiella pneumoniae, Streptococcus faecalis,* or one of the coli-aerogenes group. Toxic effects may be avoided by use of an enteric-coated tablet.

*J.A.M.A. 155:1470-1473, 1954.*

¶ SCROTAL HEMATOMA may be rapidly resorbed when treated with hyaluronidase. Gueri Axler, M.D., of Ancker Hospital, St. Paul, Minn., finds that pain is alleviated and swelling is reduced within one and a half hours when 30 to 50 cc. of 300 turbidity-reducing units of hyaluronidase, 300,000 units of aqueous crystalline penicillin, and 5 cc. of 1% procaine in normal saline is injected into the hematoma. A tight adhesive suspensory is applied after infiltration.

*J. Urol. 72:889-891, 1954.*

# Use of Cortisone During Pregnancy

EDWIN J. DE COSTA, M.D.
*Northwestern University, Chicago*

*The administration of cortisone to a pregnant woman is not harmful to either mother or child.**

CAREFULLY planned hormonal therapy apparently does not interfere with pregnancy in any way. However, steroids do not lessen toxemia or other conditions directly related to childbearing.

If acute rheumatic fever occurs during pregnancy, cortisone is not curative but gives comfort during a critical period. Treatment is not necessary for rheumatoid arthritis, which improves spontaneously in gravid patients.

Cortisone is the best available agent for acute disseminated lupus erythematosus, an uncommon but extremely serious condition. Small maintenance doses may preserve good health for years, and a number of women treated have given birth to normal babies.

Prompt treatment may give excellent results in idiopathic thrombocytopenic purpura. From 100 to 160 mg. of ACTH or 200 to 400 mg. of cortisone is administered daily. Splenectomy is often needed later, although early therapy may induce remission. Acquired hemolytic anemia of unknown origin may also be greatly improved.

Allergic conditions, including skin reactions, asthma, and inflammatory ocular conditions, are frequently relieved. For the eyes, topical therapy is generally adequate.

Addison's disease requires cortisone in small doses, desoxycorticosterone, and high sodium intake. No analgesics or general anesthetics are used during labor and delivery, and trauma is carefully avoided. With proper management the outlook is favorable.

The prolonged administration of more than 75 mg. of cortisone daily may cause harmful side effects with or without pregnancy. The most frequently observed are psychic disturbances, fluid retention with edema, and hypertension. Glycosuria, acne, weakness, and alterations of healing may also be noted. Ordinarily, hormone therapy should not be given to patients with mental disease, congestive heart failure, hypertension, Cushing's syndrome, chronic nephritis, diabetes mellitus, peptic ulcer, or tuberculosis.

Gestation enlarges the adrenals and may raise tolerance to exogenous corticoids; treatment seemingly does not increase toxemic hypertension or edema. Cortisone does stimulate potassium excretion, and the loss should be made up by greater intake.

Adrenal function is depressed during therapy with cortisone, which

*The use of cortisone during pregnancy. J. Arkansas M. Soc. 51:180-184, 1955.

inhibits secretion of ACTH. When the drug is withdrawn, dosage should be reduced gradually for several weeks in order to reestablish partial adrenal activity. If surgery, accident, or serious disease occurs before complete glandular recovery, cortisone should be resumed during the period of stress.

Cortisone has been given for toxemia of pregnancy, hyperemesis, and threatened erythroblastosis fetalis, but evidence of good results is insufficient.

## Intrauterine Hypoxia in Cerebral Palsy

DORIS LATHAM, M.D., GEORGE W. ANDERSON, M.D., AND N. J. EASTMAN, M.D., JOHNS HOPKINS UNIVERSITY, BALTIMORE, suggest that hypoxia is a more important factor in the etiology of cerebral palsy than mechanical trauma from prolonged labor or forceps operations.



The incidence of premature birth is high among infants with cerebral palsy. Early labor is often precipitated by repeated vaginal bleeding during gestation. Hemorrhage is generally caused by placental separation (see illustration), which interferes with the oxygen supply of the fetus. Although the degree of placental detachment is sublethal, repeated bleeding with hypoxia may affect neural tissue.

Duration of labor during birth of infants who later have cerebral palsy is about average, but the second stage is often prolonged and rotation of the fetal head with forceps is frequently necessary. However, incidence of rapid, spontaneous delivery is also high. Brain injury is probably caused more often by anoxia and trauma from unremitting uterine contractions than by mechanical injury.

Children who have cerebral palsy are probably defective from the moment of birth. Half of 66 babies later diagnosed as cerebral palsied were in poor condition at birth. Of 43 infants who were not premature, 86% were kept at the hospital for six days or more.

Obstetrical factors in the etiology of cerebral palsy. Am. J. Phys. Med. 33:353-358, 1954.

# Intrauterine and Neonatal Pneumonia

D. W. PENNER, M.D., AND A. C. MC INNIS, M.D.
*University of Manitoba, Winnipeg, Manitoba*

*Early rupture of the membranes, prolonged labor, and premature delivery are often associated with fetal and neonatal pneumonia.**

BACTERIAL contamination of fetal lungs may be produced by aspiration of infected amniotic fluid or by hematogenous spread from the mother. Since vaginal examination before delivery may infect both the mother and fetus, the procedure should be done only when mandatory and with rigid aseptic technic.

Incidence of intrauterine and neonatal pneumonia is highest when membranes are ruptured early and the infant is premature. Artificial rupture should not be performed unless necessary, and the mother should receive antibiotics when rupture is early.

Amniotic fluid content in the fetal lungs is evidently not significant. Respiration begins before birth and inhalation of amniotic fluid is probably a normal intrauterine function. Squamous epithelial cells, fatty vernix caseosa, lanugo, and meconium are frequently found in the bronchioles and alveoli of fetal lungs.

Postmortem studies were made of 71 babies with intrauterine or neonatal pneumonia. Half of the mothers had elevated temperatures before or after delivery. More than an average number of complications of pregnancy occurred including antepartum bleeding, artificial rupture of the membranes, prolapsed cord, maternal heart disease, polyhydramnion, hypertension, preeclampsia, and eclampsia; multiple pregnancies were also noted.

Duration of labors of 16 women was over twenty-four hours. The interval between rupture of the membranes and delivery is probably more significant. The longer the interval, the greater is the incidence of pneumonia.

The gestation period was less than thirty-seven weeks in 55% of instances. Some of the infants required resuscitation; mouth-to-mouth breathing is hazardous. Less than half of the infants have fever. Cyanosis is the most common sign. Weak, shallow, or irregular respirations may also be noted. When the disease is fatal, the infants generally succumb within six days.

Associated lesions revealed by postmortem examination include intracranial hemorrhage caused by tentorial tears, congenital heart disease, multiple congenital anomalies, liver degeneration, septicemia, skin abscesses, meningitis, colitis, syphilis, and cellulitis of the buttock.

The lungs of infants with fatal pneumonia are heavier than usual.

*Intrauterine and neonatal pneumonia. Am. J. Obst. & Gynec. 69:147-168, 1955.

The inflammatory findings are usually diffuse and bilateral. The lungs often float in water. Bronchial exudate is not common, and pleurisy and lung abscess are seldom seen. Diffuse, dark red, and congested are common descriptions. The pathology frequently cannot be differentiated from atelectasis or diffuse congestion by gross examination.

The diagnosis must be established by microscopic study. The histologic appearance of pneumonia is different in stillborn or newborn infants than in adults.

Examination generally reveals a diffuse, predominantly polymorphonuclear infiltration without bronchial involvement. Less often, mononuclear cells predominate, and the reaction simulates aspiration pneumonia. Bronchopneumonia occasionally occurs.

A hyaline membrane is sometimes prominent. The membrane is usually diffuse, lines the alveolar ducts, and has an amorphous, eosinophilic appearance. Intensity of the inflammatory reaction and occurrence of hyaline membrane are not related.

Bacteriologic studies are most reliable when similar organisms are found by culture and in tissue sections. The postmortem cultures are often positive whether or not pneumonia exists, but bacteria are seldom found in the tissue sections of the lungs of fetuses or infants without the disease.

## Cervical Smear Test for Pregnancy

L. D. SPRAGUE, M.D., TUCSON CLINIC, declares that cervical mucus smears are valuable for early diagnosis of pregnancy in 99% of cases.

The cervix is first wiped clean of vaginal discharge. Mucus is obtained by twisting a cotton-tipped applicator or aspirating cannula in the cervical canal. The mucus is then spread on a clean glass slide and allowed to dry for several minutes. Microscopic examination for fern formation should be made immediately.

The true fern is seen as a well-defined central stem with branches on either side in a palm-leaf pattern. This formation is most abundant at ovulation, then is not seen after the twentieth to twenty-second day due to progesterone activity. During pregnancy, the persistence of corpus luteum causes the fern formation to disappear.

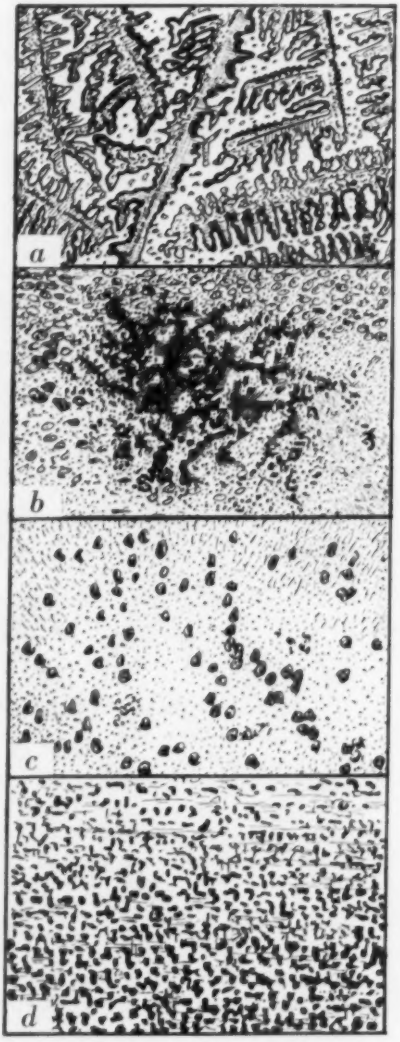
During the first month of pregnancy, atypical crystallization similar to the true fern pattern may be seen. However, the crystals are indistinct in outline and the side branches are often radially placed around a central core. If on a longitudinal stem, side branches of the atypical form often have separate secondary branches or outgrowths clubbed at the terminal ends and haphazardly arranged.

Diagnosis of early pregnancy by cervical mucus smears. Obst. & Gynec. 4:117-121, 1954.

# Diagnostic Pattern of Cervical Mucus

BENJAMIN E. URDAN, M.D., AND ALVIN M. KURZON, M.D.
*Marquette University, Milwaukee*

*The pattern of dried cervical mucus reflects the phases of the ovarian cycle and facilitates the diagnosis of many functional gynecologic disorders.**




THE crystallization of dried cervical mucus is apparently characteristic of any protein solution that contains electrolytes. The electrolytic substance has been shown to be sodium chloride, which exists in large amounts only during estrogen stimulation. Therefore, crystallization is due to estrogen stimulation; progesterone activity inhibits the phenomenon.

Study of the mucus is simple. The cervix is wiped with dry cotton, and a cotton-tipped applicator is inserted into the endocervical canal, gently rotated several times, and withdrawn. The mucus is deposited on a clean glass slide, allowed to dry thoroughly, and then examined under a low-power microscope.

The mucus shows a characteristic crystallization pattern during the proliferative phase of the *menstrual cycle*. Within twenty-four hours after cessation of menstrual flow, the crystallization can be detected. The pattern resembles the arborization of a palm leaf or fern and is initially light and delicate in appearance. As the follicular activity

*Cyclic changes of cervical mucus. Obst. & Gynec. 5:3-12, 1955.

of the ovary increases, the pattern becomes increasingly intense and heavy until the occurrence of ovulation (Fig. *a*).

Within twenty-four hours after ovulation, the pattern subtly changes and appears to be mixed. Crystallization is less intense, and many of the fern areas show disintegration of the branching arms (Fig. *b*). These areas are often surrounded by an amorphous mass with a ring of cervical cells. These cells show polarity that appears as black beads lying parallel when viewed with a reduced illuminating light of the microscope.

Crystallization disappears within three days of this alteration and is replaced by a completely cellular pattern (Fig. *c*). This change becomes more intense and compact as corpus luteum function increases. The pattern of this function may appear from the twelfth to the twenty-first day of the cycle. A dense cellular pattern is seen immediately before onset of the menstrual flow (Fig. *d*).

Basal body temperature studies usually confirm the findings in mucus samples, but the change in mucus may occur before or even without a thermal shift. The degree and intensity of both the crystallization and the cellularity seem to be influenced by the functioning degree of the respective hormonal protagonists.

The cellular pattern seen during the secretory phase of the normal menstrual cycle is also observed during *pregnancy*. Since no morphologic alteration can be detected to distinguish the conditions, diagnosis of pregnancy cannot be made from the cervical mucus alone. However, the possibility of pregnancy is strong when the cellular pattern persists beyond reasonable lengths associated with the patient's normal menstrual cycle. In addition, pregnancy can be quickly eliminated as a cause of amenorrhea when crystallization does not appear in cervical mucus.

During the late *menopause*, when ovarian senility prevails, no crystallization of mucus occurs. However, the cellular pattern differs from that of a normal cycle. A loose cellularity is seen associated with a varying number of squamous cells instead of the cylindric cells of endocervical origin observed in younger patients.

¶ PERFORATION OF THE UTERUS may result from attempted self-induced abortion with an ordinary rubber urethral catheter. When a catheter is seen roentgenographically in the uterus, Edward C. Veprovsky, M.D., and Leonard L. Ostreich, M.D., of Queens General Hospital, Jamaica, N.Y., advise prompt and conservative surgical management. In 3 such instances, the instrument was removed and the tear repaired; the patients subsequently aborted. Hysterotomy was done in another patient, and the fetus and catheter were evacuated.

*Am. J. Obst. & Gynec. 68:1615-1620, 1954.*

# General Anesthesia in Obstetrics

LEON GREENWALD, M.D.
FRED EDMUNDS, M.D.
THERESA HAUBRICK, M.D.
JAMES GRAY, M.D.
ANTHONY PARAISO, M.D.
SALVADOR ROSSELLO, M.D.

*Lutheran Hospital of Maryland, Baltimore*

*Use of a balanced-mixture anesthesia during delivery eliminates many of the disadvantages of general anesthesia.**

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OBSTETRICIANS generally concur that, insofar as viability and breathing time of the infant are concerned, local or regional analgesia is by far superior to general anesthesia. However, public resistance to spinal saddle blocks for deliveries is increasing. Therefore, a general anesthesia is needed that will not [1] cause maternal vomiting during anesthesia, [2] depress the fetus, [3] require skilled anesthetists for administration, or [4] increase the incidence of postpartum hemorrhage. The Shane-Ashman, or balanced-mixture, anesthesia fulfills these requirements.

The method employs a specific, synergistic mixture of nitrous oxide and cyclopropane. Each gas is administered at one-half its anesthetic dose in a semiclosed system in combination with oxygen. Demerol or a barbiturate is also administered to the patient.

Initially, the flowmeter settings on the anesthesia machine are

Oxygen—2,000 cc. per minute (45%)

Nitrous oxide—1,000 cc. per minute (45%)

Cyclopropane—300 cc. per minute (10%).

After the rubber mask is strapped in place, the breathing bag is primed with 100% nitrous oxide to expedite unconsciousness, and the exhalation blow-off valve is opened fully.

A fresh carbon-dioxide absorbent must be used in the circuit for adequate elimination of the gas. However, with the exhalation valve open, most carbon dioxide is blown into the operating room. The procedure is safer than when the anesthetist must aid respiration by compression of the breathing bag.

In patients sedated with Demerol, morphine, scopolamine, paraldehyde, or barbiturates, two or three minutes of breathing the gas mixture should produce anesthesia. Episiotomy and delivery can then be done. Maintenance by the gas mixture may be continued indefinitely. Anesthesia will not deepen beyond plane I of stage III, the lightest depth of surgical anesthesia.

As the fetal head is being delivered, the following steps should proceed rapidly to assure a well-oxygenated infant:

- Termination of the flow of nitrous oxide and cyclopropane

*Obstetric anesthesia. Obst. & Gynec. 5:63-69, 1955.

- Compression and emptying of the breathing bag
- Increase of oxygen flow to 10 to 15 liters per minute and continuation of 100% oxygen flow until the cord is clamped
- For episiotomy repair, emptying of the bag of oxygen and refilling with nitrous oxide
- Readjustment of the flowmeters to the original settings for oxygen, nitrous oxide, and cyclopropane.

Most patients will respond to commands within three to five minutes after anesthesia is terminated.

To insure predictable anesthesia for the unsedated patient, intravenous medication must be given before the gases are breathed. Demerol, 50 to 75 mg.; Nembutal, 75 to 200 mg.; Seconal, 75 to 200 mg.; 5% solution of Evipal, 7 cc.; or 2.5% solution of Pentothal, 7 cc., injected intravenously within five minutes of delivery, will cause little depression in the fetus.

The gas combination will produce a reliable, smooth anesthesia only if the patient is first rendered amnesic or unconscious with a small dose of a barbiturate or Demerol. Use of inhalation induction agents such as vinyl ether or chloroform will not produce the same effects.

The balanced mixture was used for 1,131 mothers over a three-year period. In no instance was anesthesia administered by a trained anesthesiologist. A comparison was made with 904 mothers given terminal saddle-block spinal analgesia. Prepartum sedation was approximately the same for both groups. Breathing and crying times of the infants born under the balanced-mixture method compared favorably with the control group.

No maternal deaths occurred. Of the group receiving the balanced mixture, no patients vomited during induction or maintenance of anesthesia, and, thus, the most frequent single cause of maternal mortality during general anesthesia, aspiration of vomitus, was eliminated. Postpartum hemorrhage was not increased by the gas mixture.

In the total 2,035 cases, 39 infants died within forty-eight hours. However, no deaths were attributable to anesthesia.

¶ INTESTINAL MONILIASIS resulting from therapy with broad-spectrum antibiotics is effectively treated with sodium caprylate (Kaprylex). The drug is given orally in amounts up to 400 mg. four times a day, reports John McGivney, M.D., of the University of Texas, Galveston. When perianal cutaneous tissues are involved, wet dressings and ultraviolet light are used, followed by application of a 10% solution of sodium caprylate or Castellani's paint. Chronic anal pruritus, irritations, and sensitivity reactions are treated with irrigations of Furacin solution and applications of Rectasone, a preparation containing hydrocortisone acetate and benzalkonium chloride.

*Texas J. Med. 51:16-18, 1955.*

# Factitial Proctitis from Irradiation

BERNARD J. KAPLAN, M.D.
*University of Minnesota Hospitals, Minneapolis*

*Artificially induced proctitis is a benign lesion and can usually be adequately treated with conservative measures.**

TREATMENT of pelvic viscera with radium or roentgen rays may cause proctitis ranging in severity from slight inflammation of the anterior rectal wall to extensive fistula or stricture. Proctitis, frequently seen after therapy for cervical carcinoma, is considered justifiable, since the irradiation does cure or impede the malignant disease.

Symptoms of irradiation proctitis are usually first noted between three and four months after treatment, although the condition may appear during the period of therapy or not until five years later. About half of patients have rectal bleeding and almost 30% have diarrhea. Other common symptoms include pain, abdominal cramps, constipation, rectal tenesmus, and excessive mucoid discharge. As many as 40% of patients may have no subjective symptoms even though disease is advanced.

The most important single proctoscopic finding is telangiectasia. The earliest changes are slight to moderate erythema with some edema of the mucosa. As proctitis progresses in severity, the mucosa loses its normal smooth, glossy appearance and becomes granular. When rubbed with a cotton swab the surface bleeds easily. As the lesion advances, the midanterior wall of the bowel develops a pale, yellowish, stellate-shaped membrane with a diffusely red surrounding area. Eventually the pale area is replaced by erosion of the surface which progresses to ulceration. The ulcer is covered with a thick, tenacious, dirty-gray slough. Further extension produces fistula, stricture, or bowel perforation.

Early, nonsurgical cases can be effectively treated with topical hydrocortisone. The patient is instructed to cleanse the rectum with warm water or saline morning and night. Twice a day, 75 mg. of 2½% hydrocortisone ointment in a water-soluble base is instilled with a 4-in. rectal applicator. The medication is retained as long as possible. Bleeding usually ceases after only a few applications. Rectal pain and tenesmus cease promptly, and in about 90% of cases healing is rapid.

Surgical measures are recommended for repair of rectovaginal fistulas and strictures which cannot be controlled by other means and for bowel perforations or obstructions. Resection and primary anastomosis is done for incapacitating sigmoid strictures.

*Factitial proctitis: a clinical study. Bull. Univ. Minnesota Hosp. 26:301-315, 1955.

# Acute Asthma in Childhood

SAMUEL J. LEVIN, M.D.
*Children's Hospital of Michigan, Detroit*

*With a dust-free room and proper medication, asthmatic children may recover at home from acute attacks.**

---

THE child with an acute attack of asthma is put to bed and propped on pillows. Mattress, box spring, pillows, and blanket are completely enclosed in dust-proof material such as sheeting. The floor is kept bare, except for small, smooth, washable cotton rugs, and is wiped with a mixture of mineral oil and furniture polish rather than wax.

Room temperature is maintained at about 70° F. Hot air outlets are covered with filters or layers of gauze, and an air-conditioning unit or slowly revolving fan is useful. No smoking is allowed near the child.

Plain steam is provided to relieve laryngitis, tracheitis, or bronchitis; between inhalations, a kettle may be kept boiling in the room.

Sweet fluids such as tea, fruit juices, and soft drinks at room temperature are offered frequently to combat acidosis. Cold food and fluids are forbidden, and any food that has ever caused sensitivity, even if tolerated between attacks, is eliminated. Milk aggravates a tendency to nausea or vomiting and is removed from the diet at the onset of the attack.

## THERAPY

Nasal congestion should be cleared promptly. NTZ nose drops, containing 0.5% Neosynephrine, 0.1% Thenfadil hydrochloride, and 1:5,000 Zephiran hydrochloride, are usually effective.

For cough, syrup containing 8 mg. each of codeine and ephedrine hydrochloride is given every three or four hours. Codeine must be used judiciously as overdosage or idiosyncrasy to the drug may ensue.

Ephedrine may be given orally in doses of 8 to 25 mg., unless side effects are noted. Ephedrine hydrochloride is less irritating to the gastrointestinal tract than sulfate. For sensitive children, 8 to 30 mg. of Propadrine hydrochloride may be substituted.

The preferred drug for acute asthma is 1:1,000 aqueous epinephrine, injected in doses of 0.1 to 0.25 cc. every two to four hours, if necessary. Parents may be taught the hypodermic technic.

In some patients, slow-acting epinephrine may be given alone or after the initial short-term injection. Sus-Phrine, 1:200, an aqueous suspension, is particularly suitable. The preparation flows freely through a

*Management of the acute asthmatic attack in childhood. Pediat. Clin. North America 1:975-985, 1954.

needle, and 20% of the amount injected is available for instant bronchodilation. The dosage is 0.1 to 0.25 cc.

Inhaled bronchodilators may be used for children at least 7 years of age. Epinephrine hydrochloride, 1:100, may be given with an all-glass or all-plastic nebulizer to obtain a fine aerosol.

Sedation may be provided with barbiturates but never with morphine. Nembutal or Seconal is given orally in doses of 50 to 100 mg. In case of vomiting, a larger amount is administered in a rectal suppository or in ½ oz. of tap water as a retention enema. Occasionally, 30 to 60 mg. of sodium phenobarbital is administered by hypodermic injection.

Aminophylline may be taken rectally in suppositories or tap water. At the age of 4 years, 0.25 gm. is given two or three times at intervals of three or four hours; for a younger child half a suppository, slit lengthwise, is inserted. If severe asthmatic attacks persist, 0.006 gm. of aminophylline per kilogram of body weight may be given intravenously at an extremely slow rate to avoid shock, rapid pulse, and circulatory collapse.

Antibiotics or chemotherapy or both are administered promptly for an associated respiratory infection. Procaine penicillin G is injected intramuscularly, 300,000 units daily, for two or three days. The same amount of Bicillin may be given with the first dose. After the initial parenteral injection, 100,000 to 250,000 units of penicillin, depending on the child's age, may be taken orally every four hours.

When other measures fail, ACTH and cortisone may be employed in courses of three to five days. At 5 years or older, repository ACTH gel is injected, 20 to 40 units the first day, 20 units the second, 10 to 20 units the third, and if necessary 10 units daily on the fourth and fifth days. Younger children receive one-half to one-third as much. If injection of ACTH is ineffective, oral cortisone may be tried.

Children with status asthmaticus require hospitalization.

¶ REMISSION OF PSYCHIATRIC DISORDERS at times may be achieved with rhythmic sensory bombardment therapy. John W. Lovett Doust, M.B., of the University of Toronto and Robert A. Schneider, M.D., of the University of Oklahoma, Oklahoma City, postulate that successful treatments induce a stage of shock accompanied by anoxemia and a subsequent rebound state with heightened capillary blood-oxygen saturation. Rhythmic sensory bombardment therapy permits the intensity and duration of action of the stress applied as photic or sonic stimuli to be established for each individual. During a two-year period, 55% of 51 patients had satisfactory remissions and 25% were improved. Paranoid, depressed, and psychopathic subjects are benefited the most.

*Dis. Nerv. System 15:357-369, 1954.*



SPECIAL EXHIBIT

# Prevention of Streptococcal Infection and Rheumatic Fever with Penicillin

JOSEPH M. MILLER, M.D., PAULINE A. O'CONNELL, M.D.,
MELVIN H. KAPLAN, M.D.,
AND BENEDICT F. MASSELL, M.D.

*Children's Medical Center and Harvard University, Boston*

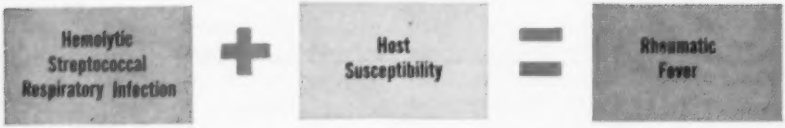
- Etiologic factors in rheumatic fever
- Applications of penicillin for rheumatic fever prevention
- Use of daily oral penicillin prophylaxis in outpatients recently recovered from acute rheumatic fever

*A Modern Medicine Exhibit adapted from a presentation made at the Second World Congress of Cardiology and the Twenty-seventh Annual Scientific Sessions of the American Heart Association, Inc., in Washington, D.C.*

*SPECIAL EXHIBIT*

# Etiologic Factors

## *in Rheumatic Fever*




Nature of host factors is not known except that susceptibility seems to be inherited.

The mechanism by which group A streptococcal infection precipitates rheumatic fever is not understood, but this relationship is the key to prevention of rheumatic fever.

*Clinical and Pathologic Manifestations*

- Migratory arthritis
- Sydenham's chorea
- Erythema marginatum
- Subcutaneous nodules
- Acute pericarditis with effusion
- Heart block
- Mitral stenosis
- Aschoff bodies

## *Streptococcal Infections May Be Asymptomatic*

Nearly one-half of streptococcal infections causing recurrences of rheumatic fever may not be recognized by clinical examination alone.

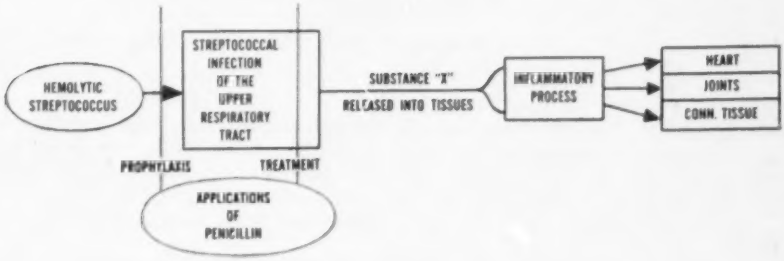
Events which preceded 58 definite rheumatic fever recurrences, 1939-45

| | | |
|---|---|---|
| Acute tonsillitis and/or pharyngitis | 31 | 53.5% |
| Head cold | 1 | 1.7% |
| Unexplained fever | 13 | 22.4% |
| Asymptomatic hemolytic streptococcal infection | 13 | 22.4% |

Because of the difficulty in diagnosing streptococcal infection, daily oral penicillin is the preferred method for preventing rheumatic fever recurrences.

# Applications of Penicillin

## *for Rheumatic Fever Prevention*




*Recommended Dosage Schedules*

- *Prophylaxis:* Buffered penicillin G, 200,000 units, taken twice daily one-half hour before or two hours after eating
- *Treatment:* Buffered penicillin G, 400,000 units, taken three times daily one-half hour before or two hours after eating for ten consecutive days

*Resistance:* No strain of group A hemolytic streptococcus has been found to be resistant to penicillin.

*Toxicity:* The incidence of toxic reactions to oral penicillin is very low. Of 296 patients treated with oral buffered penicillin G, not a single instance of toxicity, idiosyncrasy, or hypersensitivity was seen.

Recurrence rates of rheumatic fever before and after establishment of penicillin prophylaxis

| | Total patients | Observation period | Preventive therapy | Number of streptococcal infections | Number of recurrences of rheumatic fever | |
|---|---|---|---|---|---|---|
| | | | | | Definite | Suspected |
| 1939-45 | 1,097 | 20,852 patient-weeks | none | 135 | 58 | 41 |
| 1953-54 | 184 | 1,799 patient-weeks | oral buffered penicillin G, 200,000 units twice daily | none | none | none |

*SPECIAL EXHIBIT*

# Use of Daily Oral Penicillin Prophylaxis . . . *in Outpatients Recently Recovered from Acute Rheumatic Fever*

Comparison with untreated sibling controls, 1953-54

*Plan of Study*

- *Rheumatic group:* 77 children recently recovered from acute rheumatic fever were seen in a special follow-up study at a minimum of four-week intervals. At each visit, physical examinations were performed, and throat cultures, sedimentation rates, and antistreptolysin-O titers were determined.
- *Control group:* 94 siblings of the rheumatic children were studied in an identical manner.

*Prophylactic Regimen*

- *Rheumatic group:* Buffered oral penicillin G, 200,000 units, was given twice daily.
- *Control group:* Penicillin was not administered unless a positive culture for group A streptococcus was obtained. Treatment was then directed toward prompt eradication of the organism.

*Home Visits:* In instances of acute respiratory infections in both rheumatic and control groups, a home visit program by physicians was recently instituted in order to obtain clinical and laboratory data.

RESULTS

| Group | Total number | Patient-weeks of observation | Streptococcal infections (positive throat culture and/or ASL-O rise) |
|---|---|---|---|
| Rheumatic children | 77 | 2,040 | 5 |
| Sibling controls | 94 | 2,067 | 35 |

In the sibling control group, 35 children (37%) showed laboratory evidence of group A streptococcal infection during the ten-month period of observation.

In the rheumatic group receiving prophylaxis, 5 children (6.5%) showed evidence of infection.

Whether streptococcal infection in the rheumatic children represents a breakthrough of prophylaxis or poor patient cooperation in taking penicillin is under investigation.

In the rheumatic group, 1 recurrence of rheumatic fever was seen; this was definitely correlated with poor patient cooperation.

In the sibling control group, no instance of rheumatic fever was observed. Prompt treatment of streptococcal infection probably contributed to prevention.

# Penetrating Keratoplasty

MAX FINE, M.D.
*Stanford University, San Francisco*

*With proper selection of patients, good surgical technic, and careful postoperative care, corneal transplants offer an excellent chance for improved visual acuity.**

---

THE success of corneal transplantation depends primarily upon the experience of the surgeon and upon painstaking operative technic. The results in properly chosen patients approach those of retinal detachment surgery. The operative risk apparently is no greater than that entailed in cataract extraction.

Patients should be selected for surgery if the need for improvement is definite and sufficient benefit can be expected. No absolute level of visual acuity should be set as a criterion for operation. Extracorneal disease such as glaucoma, cataract, or amblyopia should be detected preoperatively and included in evaluation of prognosis.

Preparatory procedures are usually unnecessary. Superficial keratectomy with or without irradiation may be done when the cornea is extremely vascular. However, slight vascularity does not hinder keratoplasty, and irradiation is usually reserved to combat growth of new capillaries during the postoperative period.

Donor material is obtained from 2 principal sources. Cadaver eyes removed two to eight hours after death provide most of the transplants. The eyes are suspended in an airtight bottle and are refrigerated until used. Transplants are performed within twenty-four hours after the donor's death. The other source is from eyes enucleated for tumor in the posterior segment or for absolute glaucoma; transplantation is done within a few hours after enucleation.

Either square or round transplants may be used. Multiple silk sutures are employed to secure proper apposition and to obtain watertight closure of the anterior chamber. The procedure is technically simple, but attention to minor details of technic frequently is the difference between success and failure.

Iris adhesions and secondary glaucoma are the principal immediate postoperative complications. Adhesions may be caused by delayed filling of the anterior chamber and are freed with a blunt spatula through a cyclodialysis or a small corneal incision (see illustration).

Adhesions located at the periphery usually do not require any treatment. Glaucoma may occur as a result of operative intervention. In some instances, however, the condition is considered to be con-

*Late results of penetrating keratoplasty. Arch. Ophth. 53:13-37, 1955.



trolled before surgery but reappears after operation. Surgical therapy is usually necessary.

Edema of the graft may occur three weeks to eighteen months after keratoplasty. The origin of the opacification is not clearly understood. A slight inflammatory reaction is associated, and slight conjunctival flush and photophobia may occur. The aqueous is usually clear, and reaction in the surrounding cornea is lacking. Topical cortisone or hydrocortisone is the most effective treatment and should be applied two to three times daily for at least six months after onset of edema to prevent recurrences. The later the edema appears after keratoplasty, the better the prognosis for clearing.

Ectasia of the graft is another late sequela and is due to poor coaptation or to thinness of the recipient cornea or graft. The resulting refractory error often requires contact lenses for correction. Surgical repair is occasionally feasible.

Vision damaged by dense vascular leukomas, severe chemical burns, or trachomatous or exposure keratitis is usually not benefited by pentrating keratoplasty. Retransplantation after initial failure is particularly unsuccessful, and frequently the vision becomes poorer.

Of 100 patients, 74 were improved 2 steps or more in the visual acuity scale, 16 were not benefited, and 10 were worse after penetrating keratoplasties. Best results were obtained with keratoconus.

¶ CYCLOPLEGIA AND MYDRIASIS are more rapidly obtained, even in darkly pigmented irides, with cyclopentolate hydrochloride (Cyclogyl) than with homatropine and other compounds. Dan M. Gordon, M.D., and Melvin H. Ehrenberg, Ph.D., of New York City find that the mydriatic action is complete in about thirty minutes and the greatest cycloplegic effect is produced in thirty to sixty minutes when 2 drops of 0.5% buffered solution of the drug are instilled into each eye at five-minute intervals. Recovery occurs within twenty-four hours. Toxic reactions do not occur and sensitization does not develop. Intraocular pressure is not affected by the substance.

*Am. J. Ophth. 38:831-838, 1954.*

# Essentials of Cataract

WILLIAM CHARLES CACCAMISE, M.D.
*University of Rochester, N.Y.*

*Although the exact diagnosis and specific treatment of cataract are the responsibility of the ophthalmologist, the general practitioner should understand the essentials of this common ocular condition.**

---

CATARACT is any opacity of the lens of the eye and occurs to some degree in almost everyone. Whether a cataract causes a disturbance in vision depends on the size, position, and density of the opacity.

Most gross lens opacities can be demonstrated by examining the pupillary reflex with ophthalmoscope or flashlight. Evaluation of the crystalline lens requires a pupillary diameter of at least 6 mm. The safest noncycloplegic mydriatic drugs are 1% Paredrine hydrobromide and a solution consisting of 5% Neosynephrine hydrochloride and 5% Euphthalmine hydrochloride. When glaucoma is suspected, dilatation of the pupil should be done only by an ophthalmologist.

In ophthalmoscopic examination of the pupillary reflex, the pupil is viewed with a zero lens from a distance of 12 in. Opacities in the cornea, lens, or vitreous body are seen as black flecks or stripes within the normal orange-red area of the pupillary reflex. As the patient looks up or down, displacement of the opacity in the same direction as the eye moves indicates that the defect is in the cornea or anterior half of the lens. If displaced in an opposite direction, the opacity is in the posterior half of the lens or the vitreous body. If not in a fixed position, the opacity lies in the vitreous body. A central ring reflex which moves only slightly suggests a nuclear cataract. A completely black pupillary reflex may be caused by a miotic pupil, dense corneal opacity, advanced cataract, or massive vitreous hemorrhage.

When a flashlight is used to examine the pupillary reflex, the light is directed onto the cornea and the patient is instructed to look up, down, right, and left. A corneal opacity appears as a grayish haze or whitish spot in an otherwise transparent cornea. Lens opacities appear as grayish-white areas in the grayish-black pupil.

Surgical removal of cataract restores vision in 85 to 90% of patients. Medical treatment is not effective for primary lenticular opacities. With cataract associated with systemic or ocular disease, treatment of the primary disease rarely prevents progression of cataract.

Intracapsular extraction may be employed for cataract, with removal of the entire lens. Every effort

*Cataract: essentials for the non-ophthalmologist. Postgrad. Med. 17:38-42, 1955.

is made not to open the lens capsule, and the patient is not required to wait years for the cataract to become mature. Instead, surgery is performed when vision is no longer adequate. Maturity of the cataract is required for extracapsular extraction, which is used in some patients between the ages of 25 and 40 years.

If immature cataracts occur in one or both eyes and binocular visual acuity is sufficient for the patient's purposes, surgery is not done. Mature or hypermature cataracts require operation to ensure survival of the eye.

Surgery is not done if tests indicate that cataract extraction will not improve vision. In spite of cataract, the patient should be able to perceive and accurately locate a point source of light and also be able to identify colored light. The pupil should respond normally to light.

Cataract surgery is not done if a patient's general physical condition is poor or if his life expectancy is very limited.

## Bilateral Homonymous Hemianopsia

FREDERIC M. REESE, M.D., JOHNS HOPKINS UNIVERSITY, BALTIMORE, reports that many conditions may produce bilateral loss of vision. Prognosis for return of vision is variable and depends upon the underlying cause.

Severe *anoxia* during anesthetic mishaps or airway obstruction may produce blindness. The occipital cortex is particularly susceptible to oxygen deprivation, and only a few minutes of anoxia may cause difficulty. Loss of vision is usually permanent. During *ventriculography*, the visual cortex may be traumatized by the needle, with consequent hemorrhage. Usually, blindness is only temporary and recovery is complete.

*Air embolism* may occur during thoracic surgery, artificial pneumothorax, air injection into the sinuses, and trauma to the jugular vein. Severe headache, dizziness, tachycardia, shallow respirations, and convulsions may result. Blindness may occur early and last a few minutes to several days but in most instances is only a temporary condition.

Bilateral homonymous hemianopsia is probably most frequently associated with widespread *vascular disease*. With vascular hypertension, the condition may be due to hypertensive encephalopathy. However, in nonhypertensive persons, thrombosis is apparently the etiologic factor. Vision in these patients is usually recovered to some degree.

In rare instances, *hemolytic transfusion reaction* may cause bilateral hemianopsia. Visual recovery is usually negligible.

Bilateral homonymous hemianopsia. Am. J. Ophth. 38:44-57, 1954.

# Surgical Treatment of Knee Injuries

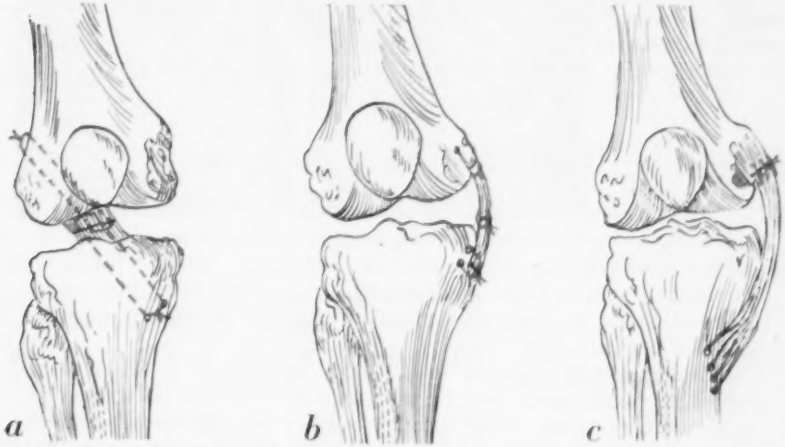
DON H. O'DONOGHUE, M.D.
*University of Oklahoma, Oklahoma City*

*Rupture of a knee ligament requires surgical repair within two weeks to assure good results, since time of repair is more important than severity of injury.**

CRUCIATE ligament stability is essential for a normally functioning knee. Early and careful repair of lacerations of the medial collateral and anterior cruciate ligaments is of prime importance. Early repair gives better results than late or reconstructive surgery.

The technic of ligament repair is not complicated but requires careful attention. To repair a typical injury, such as the medial collateral ligament and anterior cruciate ligament torn from the tibia and a ruptured medial meniscus, a long, curved incision is made from above the femoral condyle anteromedially to about 3 in. below the tibial rim.

The superficial layer of the ligament is inspected first, then the deep layer. Tears in the deep layer are frequently best delineated by rocking the tibia. Next, the medial meniscus is exposed by an incision in the knee joint through the capsule along the parapatellar line. If necessary, the meniscus is removed, and the anterior cruciate ligament is then inspected. If this ligament is




Repair of anterior cruciate ligament (*a*) and deep (*b*) and superficial (*c*) layers of medial collateral ligament

*An analysis of end results of surgical treatment of major injuries to the ligaments of the knee. J. Bone & Joint Surg. 37-A:1-13, 1955.

torn from the tibia, 2 drill holes are made from the anteromedial surface of the tibia into the area of the anterior spine. A needle ligature is passed through 1 of the holes into the joint and woven through the loose end of the ligament. The ligature is then removed from the needle and passed out of the knee through the second drill hole. By tightening the suture, the ligament is secured in its bed (Fig. *a*).

If the ligament is torn from the femoral attachment, a similar procedure is done, passing from the lateral epicondylar ridge into the intercondylar notch (Fig. *a*). A small lateral incision is made for this purpose. Sutures are not tied until the medial ligament is repaired.

Repair of the deep layer of the collateral ligament may be done in various ways (Fig. *b*). Simple suture with imbrication is often feasible for direct, well-defined tears. If the ligament is avulsed from the bone, 3 or 4 drill holes are made at the site of attachment to the bone. Sutures are passed through the drill holes and tied with the knee positioned at about 150 to 160°. The superficial layer can usually be sutured directly to its bed. However, drill holes may be utilized, if necessary (Fig. *c*). General imbrication is used for greatest tightness.

Reconstruction of the medial collateral ligament involves removing the tibial attachment and reinserting the ligament farther down the tibia. Plication or fascial graft may be utilized instead. Reconstruction of the cruciate ligament is accomplished by using a strip of tendon ¾ in. wide and 6 or 7 in. long taken from the rectus femoris tendon above the patella and including the patellar tendon down to the patellar tubercle attachment. The strip is passed through a large drill hole from the patellar tubercle into the area of the anterior spine of the tibia, across the knee joint, and out through a drill hole from the back of the intercondylar notch to the lateral epicondylar rim.

## Brace for Hyperextension of the Knee

HERBERT E. HIPPS, M.D., WACO, TEX., reports a brace for the back of the knee that may be used for children who habitually hyperextend the knee. The habit may become pernicious if the child continually fails to utilize leg muscles to stabilize the knee. Prolonged hyperextension leads to tibial condyle deformity, which may require surgical correction.

Although older children usually can be trained to avoid knee hyperextension, small children may require a brace. The brace utilizes the conditioned reflex principle. When the child hyperextends the knee, the skin of the popliteal region contacts a short, sharp pin. As the pricking sensation is repeatedly produced, a conditioned response develops and the habit is broken.

A back-knee brace. J. Bone & Joint Surg. 36A:1080-1081, 1954.

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**HYPERTENSIVE ISCHEMIC ULCER** in patient age 65. Treated with oral Priscoline, 25 mg. four times daily for four days and 50 mg. every four hours thereafter. Healing completed in 10 weeks.

PHOTOGRAPHS AND CLINICAL DATA COURTESY OF R. I. LOWENBERG, M.D., CONSULTANT, VASCULAR SURGERY, CONNECTICUT STATE HOSPITAL, MIDDLETOWN, CONNECTICUT.

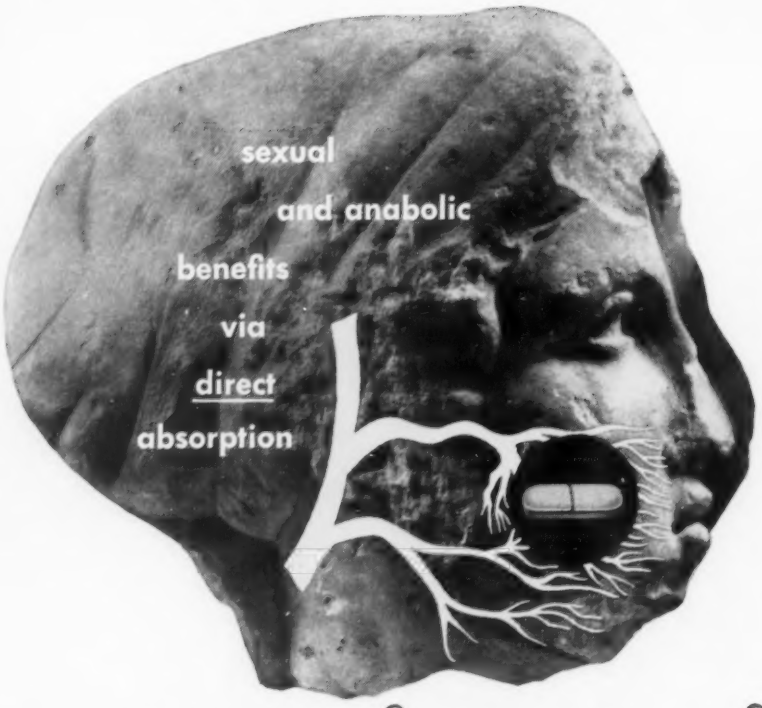
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# Iproniazid for Skeletal Infections

DAVID M. BOSWORTH, M.D., JOSEPH W. FIELDING, M.D.,
MANUEL G. ACOSTA, M.D., AND LAWRENCE M. DEMAREST, M.D.
*St. Luke's Hospital, New York City*

*Wound healing is stimulated and septic manifestations are controlled when iproniazid is administered to patients with severe nontuberculous osteomyelitis.**

PATIENTS with chronic sepsis and debilitation produced by nontuberculous bone or joint lesions often improve rapidly after therapy with iproniazid (Marsilid). Treatment may be lifesaving when the infecting organisms are resistant to antibiotics and surgery is not beneficial. The drug is effective when osteomyelitis is primary and hematogenous or occurs after trauma or operation.

Iproniazid will promote improvement in the general condition of the patient. Temperature is reduced, pain is relieved, and increase in appetite produces weight gain.

Wound healing seems to be stimulated by action of the drug throughout body tissue. No specific antibacterial effect can be demonstrated. Cultures remain positive when the purulent discharges become serous or serosanguineous and up to the time of skin closure. Pathogens probably live in the tissues for months after wound healing.

Therapy may be effective when infection is caused by hemolytic or nonhemolytic staphylococci, *Streptococcus hemolyticus, Str. viridans, Aerobacter aerogenes, Pseudomonas aeruginosa, Proteus vulgaris, Escherichia coli,* or diphtheroids. Mixed infections are common.

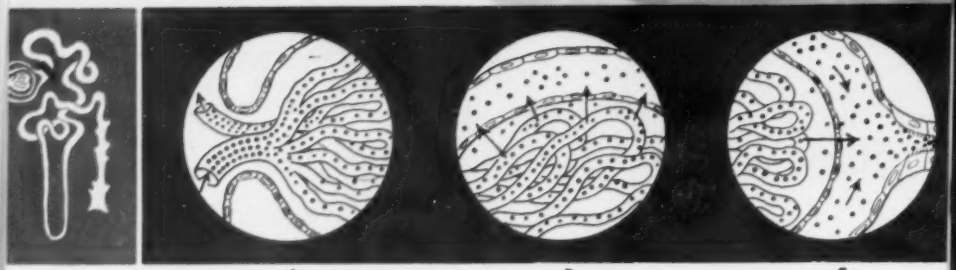
The optimal daily dose is 4 mg. per kilogram of body weight, but 3 mg. is the average amount because toxic effects demand reduction. The drug is usually administered for about six months but has been given for as long as twenty months without cumulative toxicity. Administration should be started in the hospital, but out-patient therapy is safe after dosage is regulated.

Liver damage and toxic psychosis are the principal untoward effects of the drug. The neurotoxic response is caused by concentration of iproniazid in the spinal fluid. Psychoses are reversible, and treatment with a lowered dosage is usually possible. Euphoria, dizziness, obstipation, and hyperreflexia are signs that the dosage should be curtailed. Hesitancy in urination and loss of libido may also occur.

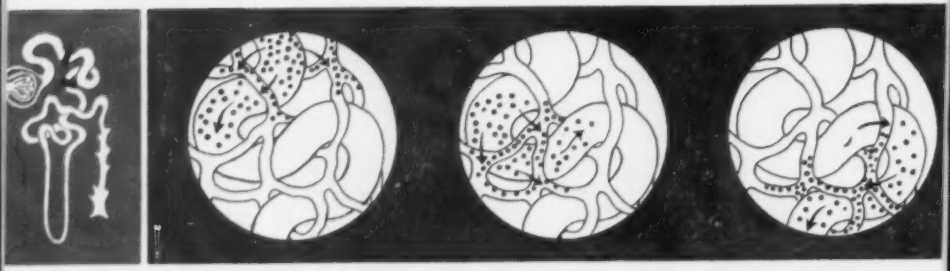
Generalized skeletal decalcification may be noted roentgenographically after iproniazid is administered for three months. Pathologic fractures do not result. Sequestrum formation seems to be inhibited and

*(Continued on page 132)*

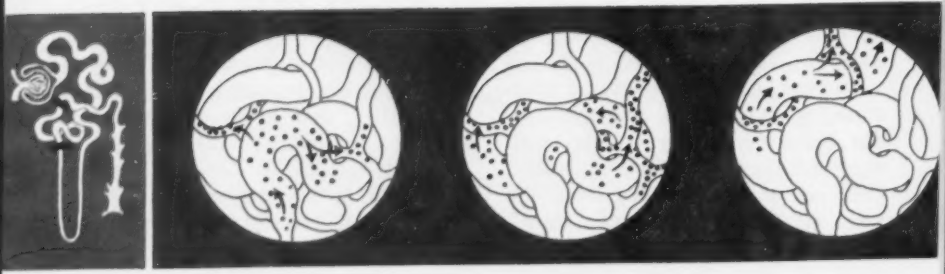
*Use of iproniazid in nontuberculous bone and joint infections. J.A.M.A. 157:132-136, 1955.




*Sodium is one of several ions and substances excreted in the glomerular filtrate; (a) afferent and efferent arterioles, (b) passage into Bowman's capsule, (c) sodium ions entering the proximal tubule.*



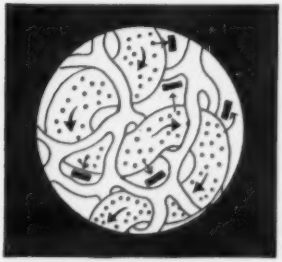
*In the proximal convoluted tubule reabsorption of water, electrolytes and other substances begins as the glomerular filtrate traverses the tubule. Among the substances reabsorbed are sodium ions.*



*Additional reabsorption into the blood stream takes place in the distal convoluted tubule. In the normal kidney reabsorption is controlled by a selective process according to body requirements.*

# Searle MICTINE Provides Effective Oral, Non-Mercurial Diuresis

The result of many years of research, Mictine, brand of aminometramide, supplies a long-felt need for an improved oral diuretic. Mictine, 1-allyl-3-ethyl-6-aminotetrahydropyrimidinedione, is not a mercurial, xanthine or sulfonamide.



*Mictine is believed to act by the selective inhibition of the reabsorption of sodium ions. The exact mechanism of this action is unknown; on administration of Mictine chloride ions in equimolar proportions to sodium ions appear in the urine.*



*Thus, the resulting diuresis is characterized by increased but equimolar quantities of sodium and chloride ions and, of course, water.*

SEARLE

***Effectiveness:*** Every method for measuring the diuretic effect in man now available, including precise human bioassay studies, without exception demonstrated that Mictine is an effective oral diuretic, and these studies show that approximately 70 per cent of *unselected* edematous patients treated with Mictine by mouth respond with a satisfactory diuresis.

***Well-Tolerated:*** There are no known contraindications to Mictine, even in the presence of hepatic or renal damage, and there is no risk of acidosis. On high dosage, Mictine causes some side effects in some patients but on three tablets daily these side effects (anorexia and nausea, rarely vomiting, diarrhea or headache) are minimal or absent.

***Indications:*** Mictine is useful primarily in the maintenance of an edema-free state and in the *initial and continuing* control of patients in mild congestive failure. Mictine may be used also for *initial and continuing* diuresis in *more severe* congestive states, particularly when mercurial diuretics are contraindicated.

***Administration:*** The usual dosage for the average patient is one to four tablets daily with meals, in divided doses on an interrupted schedule. An interrupted dosage schedule may be accomplished by giving the drug on alternate days or for three consecutive days and then omitting it for four days.

For severe congestive states the dosage is four to six tablets daily with meals, in divided doses on interrupted schedules similar to those already mentioned.

***Supplied:*** Uncoated tablets of 200 mg.

*Trademark of G. D. Searle & Co.

normal involucrum formation stimulated. Generalized decalcification aids in roentgen-ray demonstration and, therefore, removal of sequestra.

Reduction of the platelet count is the only change noted by laboratory tests after therapy.

Iproniazid does not increase hazards of anesthesia or surgery. Avertin, cyclopropane, thiopental, ether, nitrous oxide, or spinal anesthesia with preoperative morphine, atropine, or scopolamine may be used. Cocainization of the pharynx and trachea is not advisable. No complications are noted during or after operation; wound bleeding and healing are not abnormal.

Iproniazid should not be substituted for surgery or employed as the primary treatment. Antibiotics should be used until the organisms become resistant.

## Acute Calcium Deposits in the Hand

ROBERT E. CARROLL, M.D., WILLIAM SINTON, M.D., AND ALEXANDER GARCIA, M.D., COLUMBIA-PRESBYTERIAN MEDICAL CENTER, NEW YORK CITY, report that acute calcium deposits in the hand with pain, swelling, redness, and limitation of motion occur more often than is commonly believed. The deposits in the hand are similar to those in the shoulder, but, because of the superficial location, inflammation is more obvious in the skin and subcutaneous tissue.

The condition is most common in patients between 30 and 60 years of age. Stress or strain may produce a slight tear in the fiber of a tendon or ligament with resultant local necrosis and deposition of calcium salts, which cause irritation and pressure. However, initial stress or trauma is reported in only one-third of instances.

The most frequent site of involvement is the flexor carpi ulnaris tendon in the vicinity of the pisiform carpal bone. The patient invariably reports onset as sudden intense pain. Swelling and limitation of motion occur early, and the area is reddened in most instances. Streaking may occur, but lymph nodes are not enlarged. The wrists or digits are flexed in the position of rest. Point tenderness usually can be found and denotes the site of calcium deposit.

Diagnosis is confirmed by roentgenograms. Since the deposits are small, the proper projections are determined by the point of greatest tenderness. Anteroposterior and lateral views alone may not show the deposit.

The disease is self-limited. Pain is relieved most effectively by local injection of 1% procaine into the site of deposit and by soaking the hand in hot water. The calcium usually disappears within two weeks and does not reappear. Surgery is rarely necessary for the condition.

Acute calcium deposits in the hand. J.A.M.A. 157:422-426, 1955.




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***- - provides:***

Effective Radiating Area — 7 square centimeters

Maximum Intensity — 3 watts per square centimeter

Coupling Signal — audible signal warns operator when contact is inadequate for effective treatment

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The Burdick UT-1 Ultrasonic Unit simplifies the operational control of ultrasonic therapy for efficient dosage control. It is built in accordance with the recommendations of the American Standards Association for ultrasonic therapy equipment and designed to meet F.C.C. regulations.

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# Symposium on Kidney Stones

## *Management of Calculous Disease*

JOHN EAGER HOWARD, M.D.
*Johns Hopkins University, Baltimore*

A NUMBER of simple tests should be done in every instance of renal stone to determine the mechanism of calculus formations. Several factors may be operating in the same person, and the most obvious is not always most important.

Stones form most often and rapidly if urine contains large amounts of calcium or uric acid. Calcific deposits are favored by conditions involving skeletal breakdown, such as immobilization after injury or during poliomyelitis, cancer metastases to bone, Cushing's syndrome, vitamin D poisoning, and parathyroidism.

Urinary infection greatly increases likelihood of stone formation, especially with alkalinizing organisms that split ammonia from urea. Calculi that result directly from infection consist of calcium salts. Infection can be the major factor in stone formation even when associated with large amounts of calcium or other predisposing components. Bacteria are incriminated by high content of ammonium or magnesium phosphate in the calculi.

For the proper management of stones, the composition should be known. The majority are not absolutely pure, but the chief crystalloid is generally shown by simple chemical analysis. Methods can be learned quickly by any technician. Complex procedures, such as crystallographic examination, are informative but too difficult for routine use.

The type of stone cannot be identified without analysis; gouty subjects may have calcium concretions, and even severely cystinuric individuals may have no calculi or deposits of wholly different origin.

The patient should be questioned regarding alkali and vitamin D ingestion. The public still consumes enormous quantities of antacid powder and tablets for digestive complaints, raising urinary *p*H and increasing precipitation of calcium complexes. Vitamin D may induce calciuria even without calcemia.

The urinary *p*H should be determined. Results are not accurate if the collecting container has been cleaned with strong acid or alkali.

Diagnostic methods also include a urinary test for cystine. Cystinuria is often missed because of failure to analyze urine and the mistaken belief that cystine stones are always radiolucent. If the crude test with cyanide and nitroprusside is positive, Sullivan's specific procedure is employed on a twenty-four-hour specimen. A person with cystinuria excretes more than 10 times the normal amount of 40 to 50 mg. per day.

Renal calculous disease. J. Urol. 72:999-1008, 1019-1060, 1954.

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## SOLUBLE DRESSING N.N.R.



Because of its exceptional antibacterial range, Furacin Soluble Dressing is recommended especially for routine management of minor lesions. Furacin Soluble Dressing may be placed directly on the wound and covered with gauze. Impregnated gauze rolls or strips may also be used.

Furacin Soluble Dressing is economical.

Furacin Soluble Dressing and Furacin Solution contain Furacin 0.2% in water-miscible vehicles which dissolve in exudates.

Convenient 2 oz. tube; 4 oz., 1 lb. and 5 lb. jars.

**Furacin's extensive antibacterial range in vitro**

| GRAM-NEGATIVE | GRAM-POSITIVE |
|---|---|
| Aerobacter aerogenes | Bacillus anthracis |
| Alcaligenes faecalis | Bacillus subtilis |
| Brucella melitensis | Clostridium histolyticum |
| Chromobacterium violaceum | Clostridium novyi |
| Escherichia coli | Clostridium perfringens (B. welchii) |
| Klebsiella pneumoniae | Clostridium septicum |
| Klebsiella pneumoniae var. ozaenae | Clostridium sporogenes |
| Neisseria catarrhalis | Clostridium tetani |
| Neisseria meningitidis | Corynebacterium diphtheriae |
| Paracolobactrum sp. | Corynebacterium pseudodiphtheriticum |
| Proteus morganii | Corynebacterium species (diphtheroids) |
| Proteus vulgaris | Corynebacterium xerose |
| Proteus rettgeri | Diplococcus pneumoniae |
| Proteus mirabilis | Gaffkya tetragena |
| Pseudomonas aeruginosa | Micrococcus (Staph.) pyogenes var. albus |
| Pseudomonas fluorescens | Micrococcus (Staph.) pyogenes var. aureus |
| Salmonella enteritidis | Mycobacterium tuberculosis |
| Salmonella paratyphi | Streptococcus faecalis |
| Salmonella schottmülleri | Streptococcus pyogenes (hemolyticus) |
| Salmonella typhosa | Streptococcus mitis (viridans) |
| Serratia marcescens | |
| Shigella dysenteriae | |
| Shigella paradysenteriae | |

**EATON LABORATORIES**

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THE NITROFURANS—A UNIQUE CLASS OF ANTIMICROBIALS ... PRODUCTS OF EATON RESEARCH

Urinary calcium is always determined, whether or not stones are calcific. The Sulkowitch test may be adequate if no cloud is seen, but chemical analysis of a twenty-four-hour specimen is more satisfactory. When more than 200 mg. of calcium is noted when the diet is unrestricted, or above 125 mg. with a low-calcium regimen, possible sources of bone dissolution, hypercalcemia, and acidosis should be considered.

Urine is cultured, obtaining the sample when no antibiotics are being given to confuse results. If growth occurs, drug resistance of the organism is determined.

Urea-splitting bacteria are detected by a simple procedure. Small amounts of normal sterile urine are placed in 2 tubes, a few drops of the patient's urine are added to 1 tube, and both are left overnight at room or incubator temperature. Next morning, *p*H of both samples is determined with an indicator such as nitrazine paper. The tube containing an urea-splitter will be much more alkaline.

In treatment of lithiasis, old methods of increasing solubility of the crystalline salts are still effective. However, chelating materials such as citrate solutions or Versene rarely succeed and more often irritate urinary membranes.

Painful attacks due to uric acid stones may be abolished by reduction of dietary protein, increase in fluid intake, and moderate alkalinization of urine.

In some cases, urinary infection can be eradicated even if a calculus persists, and in many others treatment will prevent further renal injury and enlargement of the stone. Bacteria may be rendered harmless if not killed by moderate doses of a sulfonamide or antibiotic, given intermittently for several days at a time.

No method of improving faulty cystine metabolism is known, but as a rule concretions are avoided by forced fluids and alkaline urine. Formation of cystine or uric acid stones is generally prevented if alkalinity is maintained for eighteen or twenty hours a day and if enough fluid is taken to require diurnal polyuria and nocturia.

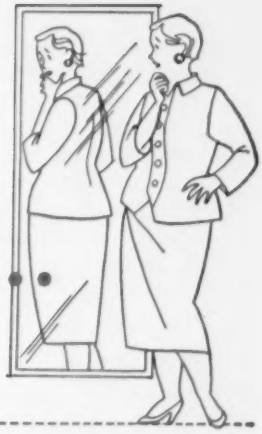
When cystine excretion is more than 1,500 mg. daily, urinary *p*H should be at least 8 most of the time. Alkalosis is commonly shown by headache and lassitude, but serum chloride and bicarbonate are determined to make sure carbon-dioxide combining power is not too high.

Alkali is conveniently supplied by a mixture containing 70 gm. of citric acid, 98 gm. of trisodium citrate, and 108 gm. of potassium citrate per liter in a palatable aqueous base. From 15 to 25 cc. is taken in a glass of water after meals and at bedtime. Dosage is adjusted for each patient.

If a subject with cystine or uric acid stone is hypercalciuric, alkalinity should be limited so as not to risk calcific stone.

Persons with idiopathic calciuria generally have recurrent oxalate stones. The source of high urinary calcium should always be sought, since elimination may break the cycle of lithiasis.

# mirror, mirror, on the wall...






*Overweight can be a physical, social, and economic handicap . . . an unnecessary handicap which can be eliminated by intelligent choice of food and moderate exercise.*

Medically supervised research on weight reduction shows active, overweight adults losing 1½ to 2 pounds per week on a diet of appetizing meals featuring a variety of foods which provide all nutrient needs except calories—and which also satisfy hunger. Persons on such diets maintained pep and sense of well-being, reported no hunger pangs . . . but shed excess pounds!

These diets contain approximately equal weights of protein, fat and carbohydrate. Fat combined with protein in a meal delays hunger for it reduces stomach motility and gastric juice secretion, promotes slower digestion, and makes possible a more gradual absorption of nutrients.

The foods included in these diets provide all essential nutrients in amounts recommended for adults. Only calories are in deficit. Dairy foods are an important feature of these meals because of their high proportion of nutrients in relation to the calories they provide. Their taste appeal and variety make the diet easy to follow until the desired weight is lost.

*Doctors!* Send for the convenient leaflet and diet instruction sheets containing menus for three full meals a day for an entire week. Diets at two moderately low calorie levels are included. These diet instructions will be useful even where a person may require a different calorie level for weight loss. For such individuals, the physician can suggest desired modification, retaining the basic diet plan.

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Most urinary stones have a binder, or matrix, that permits conglomeration of small crystals. Composition of this binder apparently resembles that of bone matrix, a highly polymerized sugar. Kidney stones may ultimately be prevented or dissolved by disintegrating the matrix as well as by attacking crystalline components.

## *Ion-Binding Urinary Mucoproteins*

WILLIAM H. BOYCE, M.D.,
FRED K. GARVEY, M.D.,
AND CHARLES M. NORFLEET, M.D.
*Wake Forest College, Winston-Salem, N.C.*

CALCIUM is found in 90% of primary urinary calculi and, alone or with magnesium, comprises the greater portion of the total cation content of the stones.

Calcific stones may originate in ion-binding mucopolysaccharides of urine. Biocolloids were recovered from urine of 14 healthy subjects and 17 persons with enlarging renal stones containing calcium phosphate, calcium oxalate, or both. No active urinary infection was observed. In the calculous group, total urinary colloids were 3 to 13 times greater than the average normal amount.

Both normal and calculous urine contain at least 2 mucoproteins that have negative charges throughout the entire *p*H range of urine. Both mucoproteins are greatly increased in urine of patients with stones, and levels are highest with parathyroid adenoma.

The mucoprotein labeled Fraction 1 binds calcium with avidity, forming an insoluble complex. If the incubating solution also contains phosphate ions, calcium phosphate then appears.

By far the largest colloidal component of normal urine is uromucoid, which contains Fractions 2 and 3. Polymerized uromucoid, the chief component of Fraction 3, is insoluble in molar sodium chloride or in buffers of *p*H 4.5 to 8.6. Depolymerized uromucoid, or Fraction 2, obtained from healthy or calculous subjects, has ion-binding properties like those of Fraction 1.

Uromucoid is certainly a secretory product of epithelial cells that line the collecting portion of the urinary tract, the main site of calcification in nephrocalcinosis.

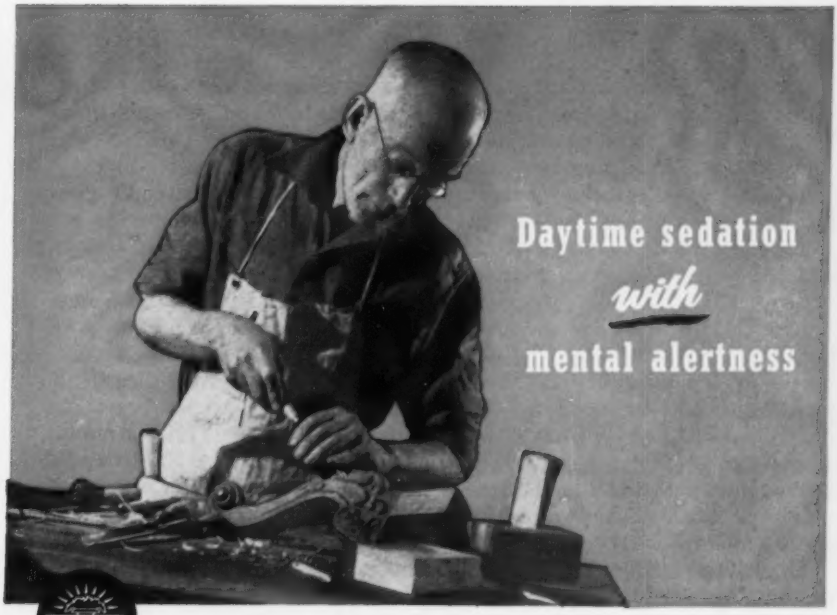
## *Lesions of Renal Mucopolysaccharides*

ROGER BAKER, M.D., AND
FRANCISCO SISON, M.D.
*Georgetown University, Washington, D.C.*

RENAL calculous disease is apparently a tubular process.

When stone formation is induced experimentally, the first change is patchy increase in mucopolysaccharide of the ground substance. Later, crystals are deposited only in areas with precalcific alterations. Glomeruli are not involved, either by alteration of connective tissue ground substance or by calcification.

Lesions were analyzed in rats who were given 3 stone-producing agents, Para-thor-mone, oxamide, and uric acid. In addition, kidneys were ob-




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Tablets of 32 mg. (½ grain)
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tained from 3 human subjects, 2 with calcium oxalate stone formations and 1 with a cystine staghorn.

Specimens were prepared with the Hotchkiss polysaccharide stain, the Von Kossa technic for demonstration of carbonate and phosphate, and the Sison formula combining both methods.

Amounts of Para-thor-mone inadequate for calcification did affect mucopolysaccharide in the tubular epithelium, and larger doses produced calcification. Oxamide had similar results. Most rats showing calcification had stones in the renal pelvis or bladder, and some had gross hematuria.

Even large amounts of uric acid seldom caused urinary crystals or stone formation, but clumped crystals appeared only in tubules with altered ground substance.

In human kidneys, both calcium oxalate and cystine calculi were associated with diffuse increase in tubular mucopolysaccharide.

### *Use of Rivici Urotensiometer*

ROBERT A. RAVICH, M.D., AND ABRAHAM RAVICH, M.D.

*Institute of Applied Biology, Brooklyn*

URINARY colloids interfere with precipitation and agglomeration of inorganic matter in the urine, thus preventing renal lithiasis.

Surface tension of urine, shown by Revici's urotensiometer, is related to the number of colloids observed per field with the ultramicroscope. Therefore, therapy that aims at reducing the tendency to stone formation by maintaining a high level of excretion of surface-active substances in the urine can be guided by measurement of surface tension.

Revici's device, a straight glass capillary tube, is as simple to use as a clinical thermometer. Length is 150 mm.; outer width, 5 or 6 mm.; and bore diameter, 0.5 mm. The surface tension of a liquid with specific gravity of 1.015, the average for urine, is read directly in dynes per centimeter, with a maximum error of 1 dyne plus or minus.

The tip of the tube is introduced into the specimen, and a column of urine is drawn to the top of the scale by gentle mouth suction. The tip is removed from the sample, and the tube is held vertically while the column falls.

The first point where the top of the column stops or is distinctly slowed, $P_1$, usually reached in less than five seconds, denotes surface tension. A second point, $P_2$, is attained in thirty to forty seconds, and equilibrium at $P_3$ in fifteen to twenty minutes.

Afternoon values were obtained for 519 white patients, 330 males and 189 catheterized females. Surface tension ranged from 56 to 73 dynes per centimeter, with an average of 67 dynes. Women had higher average levels than men.

Readings were highest with active calculous disease and urostasis, slightly less with previous stone and with inflammation, and lowest with nonurologic conditions, neoplasm of the urinary tract, and prostatic disease.

Urinary surface tension seemingly is not affected by diet or fluid




*prescribe* *a full measure of comfort for anorectal patients with*

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but varies with time of day, being highest between 1 and 7 A.M., lowest from 3 to 9 P.M. Tension of healthy persons may fluctuate 6 to 8 dynes during the day or on successive days. In chronic diseases like cancer and tuberculosis, the range may be narrow for long periods.

### *Reduction of Urinary Tension*

HARRISON C. HARLIN, M.D., AND LEON WIESEL, M.D.
*Brooklyn Hospital*

ORAL administration of glucuronolactone reduces high urinary surface tension to normal levels in a large number of cases. In prevention of stone formation, regulation of fluid intake, urinary *p*H, and diet is also necessary.

The drug is a synthetic form of glucuronic acid, an end product resulting from breakdown of hyaluronic acid by subcutaneous hyaluronidase. Effects of 4 oral doses per day were observed in 25 cases of lithiasis. Surface tension levels were compared with tension levels of 1,200 samples of urine from 100 noncalculous subjects.

Apparently, glucuronic acid produces colloidal changes that lower urinary surface tension, if levels are between 70 and 73 dynes. Medication does not reduce normal values of 66 to 69 dynes per centimeter.

The individual with stone formation is instructed to use the tensiometer twice daily. Occasional fluctuations are not significant, but when elevation is sustained, glucuronolactone is given. The drug is discontinued at varying intervals and is not resumed until surface tension is again persistently high.

### *Low-Protein Diet for Uric Acid Calculi*

MORTON BOGASH, M.D., AND ROBERT M. DOWBEN, M.D.
*University of Pennsylvania, Philadelphia*

SINCE urinary uric acid is derived from purines, which are synthesized in the body from ingested nitrogenous compounds as well as supplied in food, people with urate stones should have a diet low in total nitrogenous protein, rather than the customary low-purine regimen.

Meals should contain only 30 to 40 gm. of high quality protein daily, with enough calories to maintain weight. Although 1 gm. of protein per kilogram of body weight daily is optimal for growth, development, and general well-being, 0.2 gm. high-quality protein per kilogram will not induce nutritional deficiency.

The low-protein regimen was employed for 10 men with recurrent urate stones. Average uric acid excretion decreased 263 mg. per twenty-four hours to an almost normal value of 512 mg. Uric acid was significantly reduced in 4 subjects already using a low-purine plan.

The diet is recommended as an adjunct to alkalinization and hydration.

Concretions of uric acid represent about 6% of urinary tract stones.

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Journal-Lancet 73:414-416, 1953.

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*Ingels, A. H.: California Med. 79:437, 1953.

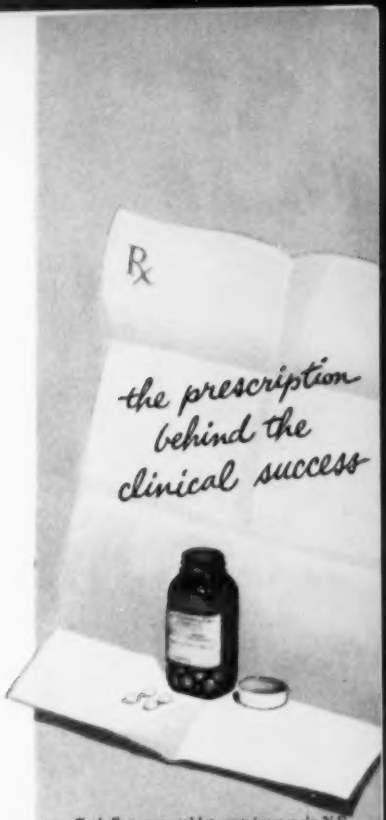
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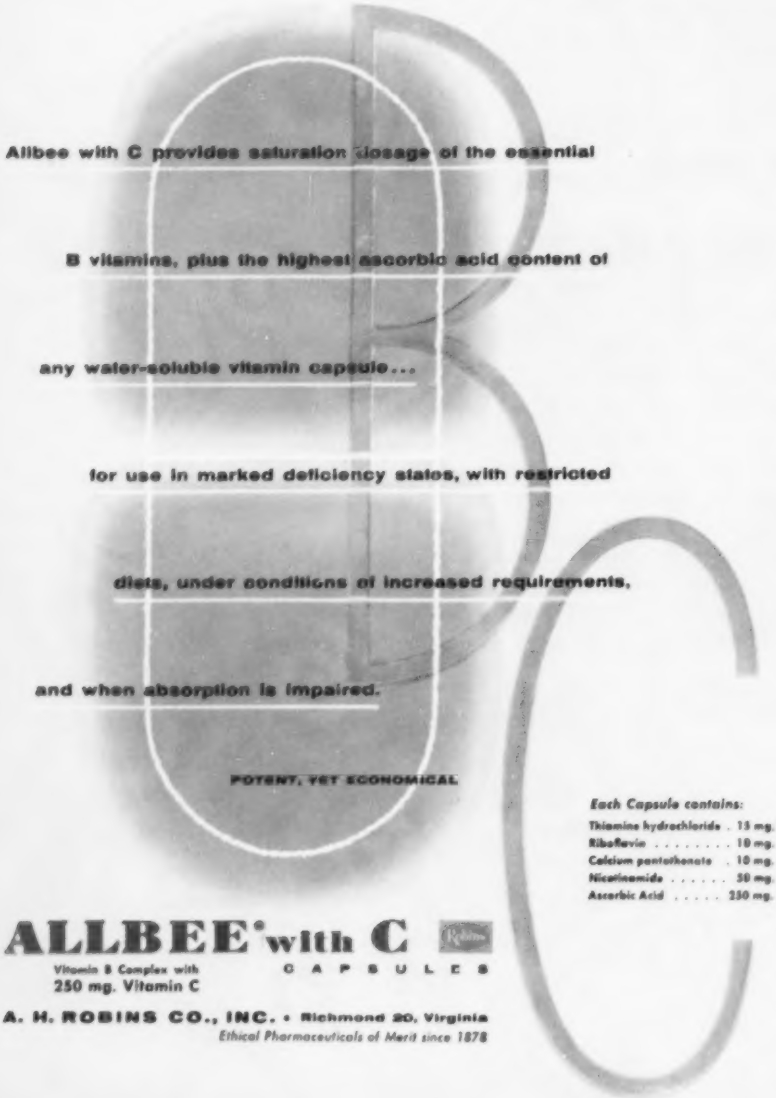



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# Irradiation Therapy in Urology

GEORGE W. BLOMFIELD, F.R.C.S.
*University of Sheffield, England*

*In treatment of urinary tract tumors, radiotherapy is ordinarily combined with surgery or administered for palliation but may be curative, especially for carcinoma of the bladder or penis.**

THOUGH the large size of *Wilms's tumors* prevents cure by ionizing radiations, preoperative roentgen-ray therapy causes regression of the tumor and facilitates surgical removal. Additional radiation should be supplied after surgery if all allowable dosage has not been utilized. For metastatic growths, radiotherapy affords palliation and controls hemorrhage.

*Carcinoma and adenocarcinoma of the kidney* are not very sensitive to irradiation. Radiotherapy is reserved as a postoperative or palliative measure and is rarely employed to reduce a large tumor before operation.

After a nephroureterectomy for *primary carcinoma of the ureter*, roentgen-ray therapy, preferably at a supervoltage level, may be directed along the tract of the ureter.

Usefulness of radiotherapy for *cancer of the bladder* is considerable. Methods of irradiation include [1] radium or radon implants; [2] radioactive tantalum wire; [3] deep roentgen rays; [4] supervoltage roentgen rays; and [5] vesical intracavitary therapy.

Radium can be inserted by extravesical implant or cystostomy. With radon, the bladder can be closed since the seeds are left in the organ permanently. Radon implants may be used for tumors smaller than 5 cm. in diameter that do not infiltrate beyond the bladder walls. When tantalum is substituted for the implants, dosage is calculated as for radium.

Roentgen-ray therapy is effective for bulky or infiltrating tumors beyond the range of radon implants or partial cystectomy. Orthodox deep roentgen-ray treatment may eradicate a radiosensitive growth but is crude and laborious in comparison to supervoltage irradiation. A larger dose can be delivered to the tumor when high-voltage rays are used because [1] penetration is superior, [2] delineation is more accurate, and [3] skin reactions are almost eliminated.

Supervoltage irradiation can be delivered by beam-directed roentgen rays with fields plotted to intersect or by rotational therapy; the beam may be rotated around the tumor or the patient can be turned around an axis that passes through the center of the tumor while the beam is fixed.

Intracavitary treatment is often

*Irradiation therapy in urology. Brit. J. Urol. 26:301-318, 1954.

advisable when the only alternative is total cystectomy or external irradiation. When radioisotopes are directed into the bladder, a higher dosage can be given than with external therapy and surrounding structures are not affected. Radioactive substances may be administered by 3 methods.

- The bladder wall is held by a balloon or bag so that the gamma ray source, radium or radioactive cobalt, is in the exact center.
- Radioactive bromine is introduced into the bladder in a catheter bag. Distribution of the irradiation adapts to the shape of the bladder. Radiobromine is a powerful gamma ray emitter and is especially suitable for multiple, widespread papillomas that are not massive or deeply infiltrated.
- Radioactive gold colloid is introduced into the empty bladder. Urine dilutes the substance. Treatment requires little time and is not unpleasant for the patient. The colloid is a weak gamma ray source but a powerful beta ray emitter. Since beta rays penetrate about 2 mm., the method can be used only for small papillomas.

Damage to the mucosa and submucosa from overdosage of any form of irradiation may produce infection, necrosis, and fibrosis of the bladder and, occasionally, repeated hemorrhages.

If a male patient with *urethral cancer* refuses an operation, roentgen-ray therapy may be substituted. Treatment of carcinoma of the female urethra depends upon size and extent of the growth. Deep roentgen rays may be beamed on the tumor externally. If the cancer is small, an implant of radium needles can be disposed in the form of a small cylinder around the urethra. An applicator containing intravaginal radium is sometimes preferred.

Carcinoma of the penis is sensitive to radiotherapy. Of 65 patients with penile cancer treated by roentgen-ray irradiation, 23 are alive and only 1 lesion recurred; 11 persons died without recurrences so over 52% of the growths were controlled.

Combined use of roentgen-ray irradiation and stilbestrol is effective palliative therapy for prostatic carcinoma. Injection of radioactive gold into prostatic tumors should eradicate the lesions if the colloid is distributed evenly.

¶ CAROTID SINUS SYNDROME is most effectively treated by irradiation. Hugh P. Greeley, M.D., Magnus I. Smedal, M.D., and William Most, M.D., of the Lahey Clinic, Boston, observed complete remission of symptoms in 58% of 52 patients and mitigation in 12%. Two or three treatments are given, on alternate days, using 200 to 220 kv. with a 2-mm. filter of copper and 1-mm. filter of aluminum; a 50-cm. target-skin distance; 200 r, measured in air; and a 5-cm. square portal. The total dose to the sinus area is 500 r if the affliction is unilateral, 400 r if bilateral.

*New England J. Med. 252:91-94, 1955.*

*To correct "The Inborn Error of Lipid Metabolism" in*

**Atherosclerosis**
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**Diabetes Mellitus**
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**Hypercholesteremia**

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# Controlled Hypotension in Surgery

DONALD E. HALE, M.D.
*Cleveland Clinic, Cleveland*

*Brief periods of controlled hypotension contribute to the safey of operation by reducing operating time and bleeding.**

DELIBERATE lowering of the blood pressure, or controlled hypotension, will expedite surgical procedures which are usually prolonged and difficult because of extensive hemorrhage. The method is particularly useful for pelvic evisceration; intracranial operations for olfactory groove meningioma, hemangioma, or aneurysm; and patent ductus arteriosus. Hypotension should not be induced in patients with advanced coronary disease, angina pectoris, or severe impairment of renal function.

Hypotension is provoked by causing a discrepancy between the circulating blood volume and the capacity of the vascular system. This can be accomplished by reducing the blood volume by arteriotomy or by increasing the capacity of the vascular system through vasodilation. A preganglionic sympathetic block or a ganglioplegic drug may be employed to dilate the vessels.

*Arteriotomy* is especially well-suited for operations to remove olfactory groove meningiomas, since these tumors derive their blood supply from the external carotid artery which shares in the generalized vasoconstriction. Arteriotomy is also useful for short periods of deep hypotension when a dry field is required to place accurately a clip on a torn intracranial aneurysm.

To accomplish arteriotomy, blood is allowed to flow from the radial artery into a flask containing A.C.D. solution. When the systolic pressure is 80 mm. of mercury, no more blood is withdrawn. Higher levels of blood pressure must be preserved in older patients. As soon as the necessary period of hypotension is ended, the blood is returned by arterial infusion until a pressure just below the prearteriotomy level is reached. Heparin, 0.01%, is employed to keep the system free of clots.

*Spinal anesthesia* produces a preganglionic sympathetic block. The level should be above the first thoracic segment to secure a total sympathetic block. Cessation of diaphragmatic action indicates a level in the midcervical region. Continuous spinal anesthesia with an indwelling spinal catheter provides good control.

*Ganglioplegia* is a simple method of inducing hypotension in a middle-aged person with moderate hypertension. Either hexamethonium or Arfonad may be used. The initial dose of hexamethonium is usually

*Controlled hypotension. Anesthesiology 16:1-10, 1955.




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(Equiv. 250 mg. U.S.P.)
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DOSAGE: One or two tablets with or just after meals.

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20 to 25 mg. intravenously. Ganglion block takes place in one to four minutes. Several injections of the same dosage may be necessary at intervals of three to four minutes before ganglioplegia is effected. Hypertensive individuals are more sensitive than those with normotensive pressures, and about 20% of subjects are not affected by the drug. Patients made hypotensive with hexamethonium seem to be resistant to shock.

Arfonad has a more pronounced effect on the arteriolar musculature than on the ganglia. The drug has a rapid action of short duration and can be regulated by continuous intravenous drip. A solution containing 0.5 mg. of Arfonad per cubic centimeter is administered intravenously at the rate of 1 to 1.5 mg. per minute. The rate of flow will determine the level of the blood pressure.

Hazards attending the use of controlled hypotension are the result of anoxia, thrombosis, and postoperative hemorrhage. Anoxia may cause cerebral damage, cardiac arrest, and anuria. Thrombosis from slowing of the blood flow may lead to pulmonary embolism. Postoperative bleeding results from imperfect hemostasis while the blood pressure is low.

## Hydrocortisone for Allergic Dermatoses

SIDNEY FRIEDLAENDER, M.D., AND ALEX FRIEDLAENDER, M.D., WAYNE UNIVERSITY, DETROIT, report excellent results with use of 1 or 2.5% hydrocortisone ointments for some eczematous and papulosquamous allergic dermatoses. Both free alcohol and acetate hydrocortisone seem equally effective.

The most satisfactory results are obtained with excoriated, scaling, or lichenified lesions; urticarial and deep vesicular lesions react least favorably. Widespread or generalized eruptions usually require systemic as well as local treatment.

The 2.5% concentration of hydrocortisone seems to be more uniformly effective than the 1% ointment. However, maintenance therapy with 1% ointment is sometimes possible after initial improvement is induced by the larger concentration. Addition of 0.5% neomycin to either concentration is of particular value in control of secondary impetigo eruptions and of some cases of otitis externa.

Improvement of chronic dermatoses is maintained only during treatment; relapses usually occur two or three days after cessation of ointment application. Tolerance to the ointment occasionally develops, but sensitivity does not occur.

Permanent cure is not effected with ointment therapy alone, and proper management requires allergic diagnosis and therapy.

Topical use of hydrocortisone and hydrocortisone-neomycin ointments in allergic dermatoses. J. Allergy 25:417-428, 1954.

**forestall**
**otitis**
**media**
**with**



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**supplied:** TYZINE Nasal Spray, in 1-ounce plastic spray bottles containing 15 cc. of an aqueous solution of TYZINE, 0.1%; TYZINE Nasal Solution, in bottles of 1 ounce, 0.1%.

1. Parish, F. A.: M. Times 82:917, 1954.
2. Menger, H. C.: New York J. Med., Mar. 15, 1955.

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# Home Care After Chest Operations

R. ABBEY SMITH, M.CH.
*Thoracic Unit, Warwick, England*

*A patient who has had thoracoplasty, lung resection, or operation for empyema should be carefully supervised after discharge from the hospital.**

---

MALAISE, weight loss, fever, hemoptysis, or increased erythrocyte sedimentation rate may occur for the first time after the patient returns home after chest surgery. The manifestations do not necessarily show that the operation has failed but do suggest activity of the disease. Continued rest is mandatory.

Patients over 40 years of age are especially likely to have dyspnea, cough, pain, stiffness of the shoulder, and weakness of the arm after *thoracoplasty*. Physiotherapy alleviates stiffness and weakness, but some persons never regain satisfactory shoulder movement.

Late in convalescence after thoracoplasty, pain may be caused by impingement of the scapula on the rib as the shoulder falls on the side of operation, periarthritis of the shoulder associated with scoliosis of the spine, or involvement of the first thoracic intercostal nerve in scar tissue and regenerating bone. The patient may interpret anesthesia along the front of the chest wall from division of the nerves at operation as pain, and discomfort may be produced by superficial wound sepsis or unabsorbable suture material.

Pain caused by activity of the disease must be differentiated. The patient should be rehospitalized if the disease spreads, an open cavity persists, or sputum is positive.

Breathing exercises are indispensable after *lobectomy* is performed for bronchiectasis. Postural drainage is also necessary to prevent infection if a second operation is planned for the other side. When lung excision is done for tuberculosis, postoperative care includes sputum examinations and radiologic studies.

After *pneumonectomy* for tuberculosis, the space left by removal of the lung is generally obliterated by thoracoplasty, and postoperative care is directed toward prevention or control of disease in the other lung. When the operation is done for carcinoma, the space is usually not eliminated, and movement of the mediastinum to the operative side may produce symptoms.

Stridor with respiratory infection may persist for weeks when mediastinal shift occurs, and pain on the operative side is more frequent when the mediastinum is not central. Stridor may also be a sign of glandular pressure on the trachea or remaining bronchus.

*Late post-operative care after chest operations. Brit. J. Phys. Med. 18:1-5, 1955.

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KEY ADVANTAGES: Rapid-acting, nontoxic urinary analgesic. No systemic effects. Compatible with sulfonamides and antibiotics.



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DIVISION OF MERCK & CO., INC.

**REFERENCE:** 1. Kirwin, T. J., Lowsley, O. S., and Menning, J., Am. J. Surg. **62**:330-335, December 1943.

Detection of local recurrence or dissemination is an important aspect of care after pneumonectomy for cancer. If a lesion recurs, blood-stained sputum, pleuritic pain, cardiac irregularity, or persistent stridor or dyspnea generally occurs within three years. General dissemination is revealed by glands above the clavicles, nodules in the skin, hematuria from renal secondaries, or evidence of deposits in the brain or bones.

When a bronchopleural fistula occurs after lung resection is performed for tuberculosis, the infected cavity should be drained with a tube until the patient can tolerate an operation to obliterate the space. The tube should be in a dependent position so discharge or blood does not flow into the bronchi.

Many patients are able to return to work about a month after pneumonectomy. A sedentary, indoor job in a dust-free atmosphere is preferable. Reluctance of a person who is seemingly well to resume work may be due to dyspnea, latent spread of carcinoma, or impairment of concentrating power by anoxia.

When *tube drainage* is utilized for acute empyema, breathing exercises are essential to prevent scoliosis. The dressing is changed daily, and position of the tube should be observed at the hospital each week. If the tube is inadvertently removed, immediate replacement is necessary since the sinus may heal in a few hours necessitating another operation.

When Lipiodol is instilled for radiographic examination, the radiopaque solution may produce fever with increases in amounts of sputum and discharge from the tube. The reaction lasts for a period of two days.

The tube is not removed until the empyema cavity is obliterated, generally in about a month. Radiograms should be made two and six weeks later.

## Trichloroethylene Toxicity in Industry

MORRIS KLEINFELD, M.D., AND IRVING R. TABERSHAW, M.D., NEW YORK CITY, believe that toxic effects of trichloroethylene can be avoided among industrial workers by keeping atmospheric concentrations of the solvent below 100 parts per million.

Death may occur suddenly after appearance of symptoms such as nausea, drowsiness, dizziness, and vomiting and is usually a result of respiratory arrest from narcosis or primary cardiac failure. Ventricular fibrillation, hepatic failure, or anoxia from tachypnea and impaired alveolar ventilation are less frequent causes of death.

Autopsies of 4 persons exposed to high concentrations of the solvent revealed no pathologic irregularities, but toxicologic analyses of the viscera showed trichloroethylene. A fifth patient died of hepatorenal failure after accidentally drinking the chemical.

Trichloroethylene toxicity. Arch. Indust. Hyg. 10:134-141, 1954.

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# Electrocardiogram in Industry

J. RICHARD DURHAM, M.D., AND LEMUEL C. MC GEE, M.D.
*Wilmington, Del.*

*The electrocardiogram is a helpful adjunct for evaluation of an employee's health and ability to work.**

USE of the electrocardiogram in preplacement and periodic industrial examinations can benefit the individual employee by [1] detecting disease early; [2] properly identifying benign abnormalities; [3] aiding suitable placement of the worker if significant disability exists; and [4] establishing a base-line tracing for later comparison.

Minor deviations such as change in $T_3$, slurring QRS complexes of normal measurement, low voltage, left and right axis deviations, premature beats, and variability in T-wave amplitudes from year to year are not considered abnormal.

When definite disease is suggested by the electrocardiogram, other and more relevant information on functional capacity is needed to estimate the worker's proper classification.

*Left heart strain* is diagnosed when $T_3$ becomes erect and greater in amplitude than an isoelectric or inverted $T_1$. Usually the existence of a strain pattern does not require a change in work classification, although strain from symptomatic hypertension, small myocardial infarcts, or rheumatic aortic disease may necessitate lighter work. No correlation exists between the prominence of the strain pattern and the height of the blood pressure.

At least 3 chest leads are necessary for recognition of the varying potentials from both ventricles; all 6 positions are recommended. In many workers over 50 years of age, gradual lessening in $T_1$, $T_4$, and $T_5$ amplitudes and some axis shift to the left may be observed without manifest disease or impairment of job performance.

Workers surviving *myocardial infarction* often may return to productive work without adversely influencing life expectancy. Unusual physical effort or the type of work has no definite bearing on the occurrence of myocardial infarction or subsequent complications. The better morale of the individual who is allowed to work may be therapeutically desirable. However, persons with known coronary artery disease should not be placed in work where sudden recurrence of symptoms may prove unduly hazardous to themselves or to others.

Right *bundle-branch block* is frequently a benign condition which does not produce syncope or add hazard to continued employment.

*(Continued on page 160)*

*The electrocardiogram in the examination of the industrial worker. Ann. Int. Med. 41:918-934, 1954.

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## LIQUID SURGICAL DRESSING

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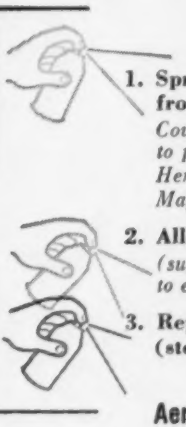
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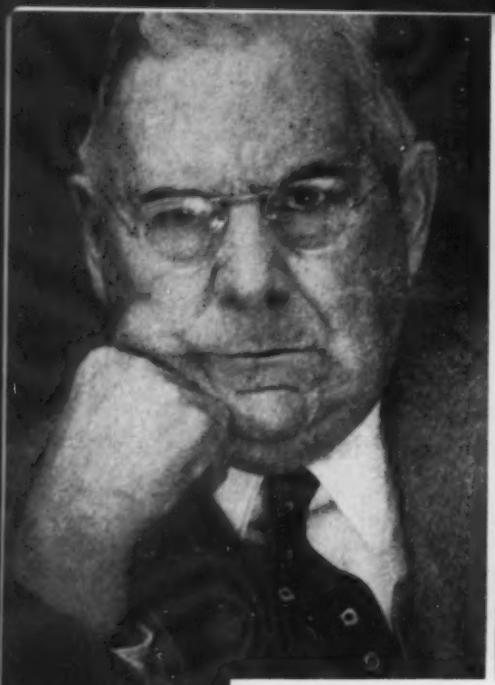
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   *Cover adjacent area of intact skin to provide anchorage.*
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Evidence of heart disease is usually not found in the S type of intraventricular conduction block in which the QRS is .12 second or longer without change in the intrinsic deflection in multiple chest leads. Employability is not altered.

Left bundle-branch block is usually associated with hypertension, myocardial infarction, and rheumatic heart disease. A poorer work prognosis is expected.

Some patients may have persistent *hypertension* of several years' duration with a normal electrocardiographic pattern. Long and full employment is usually the case.

Nearly all workers found to have *auricular fibrillation* are able to continue employment. However, auricular fibrillation requires investigation of such factors as rheumatic carditis, hypertensive disease, and hyperthyroidism.

¶ PERIPHERAL NEURITIS may result from isoniazid therapy, especially with large doses of the drug. Sol Katz, M.D., of Georgetown University, Washington, D.C., and associates report that paresthesia of arms and legs usually developed when daily doses exceeding 5 mg. per kilogram of body weight were administered to 15 patients with tuberculosis. In most instances, symptoms gradually disappeared when the drug was discontinued.

*Dis. Chest 26:264-267, 1954.*

¶ AMYOTROPHIC LATERAL SCLEROSIS may be caused by chronic mercurial poisoning when insecticides containing mercury are frequently used. Ian A. Brown, M.D., of the University of Minnesota, Minneapolis, reports that dimercaprol (BAL) arrested progression of the disease in 3 of 6 farmers exposed to ethylphenyl mercury and increased the urinary excretion of mercury in 1 fatal case. Chronic mercurialism is a neurotoxic disorder; the acute form is nephrotoxic.

*Arch. Neurol. & Psychiat. 72:674-680, 1954.*

¶ EPILEPSY WITHOUT CONVULSIONS, manifest only as pain in the leg, cyclic vomiting, headaches, pyrexia, and abdominal pain, is a fairly common, though often unrecognized, childhood ailment amenable to treatment with phenobarbital. Hugh R. E. Wallis, M.D., of the Bath Clinical Area, England, suggests extension of the term "masked epilepsy" to include the condition. The disease is often misdiagnosed as migraine or cyclic vomiting, but family incidence and response to therapy frequently facilitate the establishment of the diagnosis.

*Lancet 268:70-74, 1955.*



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## each 0.6 cc. provides:

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**DOSE:** Under 6 months—0.3 cc. daily.
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In 30-cc. and 60-cc. sizes.




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| Vitamin A (Palmitate) | 3,000 U.S.P. units |
| Thiamin Chloride | 1 mg. |
| Riboflavin | 1.2 mg. |
| Vitamin $B_{12}$ (Activity Equivalent) | 3 mcg. |
| Ascorbic Acid | 60 mg. |
| Vitamin D | 1,000 U.S.P. units |

**DOSE:** Prophylactic—1 teaspoonful daily.
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In 60-cc., 120-cc., and pint bottles.




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| Thiamin Chloride | 1.5 mg. |
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| Pyridoxine Hydrochloride | 1 mg. |
| Pantothenic Acid (as Calcium Pantothenate) | 2.5 mg. |
| Nicotinamide | 12 mg. |
| Vitamin $B_{12}$ (Activity Equivalent) | 3 mcg. |
| Folic Acid | 0.1 mg. |
| Ascorbic Acid | 75 mg. |
| Alphatocopherol (as Alphatocopheryl Succinate) | 5 mg. |
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| Vitamin $B_{12}$ (Activity Equivalent) | 10 mcg. |
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# Medical Forum

*Discussion of articles published in* MODERN MEDICINE *is always welcome. Address all communications to The Editors of* MODERN MEDICINE, *84 South 10th St., Minneapolis 3, Minn.*

## Psychiatric Aspects of Obesity*

**QUESTION: What is the importance of psychiatric factors in obesity?**

*Comment invited from*

K. R. CRISPELL, M.D.
WILLIAM PARSON, M.D.
E. P. LUONGO, M.D.
S. C. FREED, M.D.
STANLEY W. CONRAD, M.D.
JAMES J. SHORT, M.D.
MAX A. GOLDZIEHER, M.D.

► TO THE EDITORS: We would agree with Dr. Henry W. Brosin that emotional factors seem to play a large part in the control of food intake. What the physician is able to do even though he recognizes the emotional component in this loss of control of intake is difficult to evaluate. We have used Dr. Brosin's concept as our working hypothesis but are not satisfied with our results.

It is obvious but often overlooked that very few patients consult a physician complaining of obesity. On the other hand, patients with other types of emotional disorders presenting as headache, diarrhea, vomiting, and so on, are uncomfortable enough to seek medical help. In other words, a patient is not usually motivated to seek medical help for obesity, per se, but rather it is the physician who is motivated to attempt weight reduction in the obese patient.

We have learned that frightening the patient with statistics of morbidity and mortality probably does much more harm than good. Unless we give the patient a definite appointment to return to see us each month, he somehow "forgets to call" to make an appointment. Finally, in our experience, most obese patients keep their appointments for four to six months and then "disappear." The fact that the patient does not return suggests to us that attempted weight reduction has upset an emotional balance which the patient has maintained by overeating. This is consciously or unconsciously recognized by the patient and he therefore does not return for further treatment.

Long-term results of therapy for obesity are so often disappointing that Dr. Brosin is safe enough in stressing that, if the emotional cause of the obesity is not found and removed, the hyperphagia will continue. However, this is a working hypothesis and not an established causal relationship.

We are unaware of any reports in the psychiatric or medical litera-

*MODERN MEDICINE, Nov. 15, 1954, p. 115.

*(Continued on page 164)*

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ture which would establish that prolonged or permanent cure of hyperphagia in the obese resulted from finding and removing the emotional cause.

K. R. CRISPELL, M.D.
WILLIAM PARSON, M.D.
Charlottesville, Va.

► TO THE EDITORS: We are aware from morbidity and mortality statistics kept by insurance companies that obesity shortens life and affects the health of persons over 40 years of age.

The individual metabolic patterns demonstrate a wide range of variation. The high-protein, low-fat diet, although very effective in many cases, is of little use in others. Individual differences determine whether a weight reduction regime is patterned on a qualitative or quantitative basis. Any routine distribution of standard printed diet material is not advisable. Medications to reduce appetite have proved effective in persons in whom it was evident that excessive eating was due to boredom or depression. These medications generally are not well tolerated and are often contraindicated because of hypertension.

Some idea should be obtained with regard to social obligations which may require attending dinners, cocktail parties, banquets, and other functions which make dieting difficult. A good insight into the patient's recreational activities is important.

After we feel that we understand the patient's stresses and patterns of life, we are ready for definitive treatment. Whether we select a simple qualitative dietary restriction or a quantitative procedure, the responsibility for weight reduction should be placed wholly with the patient. The physician's role is to educate and guide; his role should not be a defensive one, but rather one of keeping the patient on the defensive in persisting with the weight-reducing program.

Group psychotherapy has recently shown some interesting results. One investigator reports that group psychotherapy proved effective in maintenance of weight loss in close to 50% of patients who did not succeed by other methods. He adds, however, that there was no remarkable over-all weight loss in this group of patients.

A great deal of confusion exists inside and outside of the medical profession on methods of weight reduction, on metabolism, and on nutrition generally. A large segment of the public is being attracted to costly dietary and vitamin fads and fetishes which have been spawned in the vacuum created by the dearth of clinical research in nutrition.

More clinical research in nutrition is needed. If this research can be stimulated to the same degree as in cancer or poliomyelitis, possibly our whole concept of disease—organic, functional, or mental—may be radically changed. Today we are dealing with what we consider numerous separate disease entities which tomorrow may prove to be different manifestations of a few basic chemopathologic states. We may speak more and more of disease profiles based on body chemis-

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try. In the future, our ideas of hereditary factors in both overweight and disease may attach more importance to dietary patterns in nationalities, races, and families than to the influences of genes and chromosomes.

E. P. LUONGO, M.D.
Los Angeles

► TO THE EDITORS: Dr. Brosin's article on the therapy of obesity is one of the finest presentations of the problems involved in handling this all-important condition. I cannot be too enthusiastic in endorsing and supporting his contentions. The acceptance of his methods and principles is essential for proper and successful results.

Unfortunately, most physicians are either unwilling or incapable of appreciating the need for adopting the attitude toward the patient which is advised by Dr. Brosin. This is apparently due to failure to recognize the forcefulness of the instinctive drive for eating. This instinct is one of the strongest emotional drives with which humans or animals have to contend. Our social culture, however, places a stigma on individuals who are unable to contain the desire to eat. Such individuals receive contempt rather than sympathy for their inability to master these forces.

The universally poor self-esteem of overweight persons is probably the result of this attitude. Failure to reduce weight is often associated with feelings of guilt, humiliation, and psychologic abuse. This often results in a discouraged patient who resigns himself to the fate of being overweight.

It is indeed tragic that many physicians are intensely interested in problems of degenerative diseases, such as are found in the overweight patient, but are reluctant to assume any responsibility for their prevention by proper weight reduction therapy. It is also difficult to explain why other psychosomatic illnesses such as hypertension, gastric ulcers, or colitis are treated with gentleness by the physician. When the vagus nerve to the stomach is stimulated by various emotional forces so that appetite is increased, patients are usually left to their own resources. When the vagal impulses cause pyloric spasm or ulcer, the doctor's attitude is entirely different.

This disparity probably stems from the fact that a certain amount of pleasure is involved in the induction of overweight through the eating process, while these other conditions do not involve such pleasures.

Dr. Brosin mentioned the need for removing all forms of psychologic or emotional irritations and stress in order to support the patient's desire for weight reduction. A number of organic conditions also need treatment in order to help the patient restrain the intake of food. These are more often found in women than in men. During the premenstrual phase, women very often have an increased urge to eat because of the alteration in personality at this time. Likewise, during the menopause, when nervous irritability is increased, there is also a tendency to overeat. Similarly, secondary anemia may make the

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patient lethargic so that eating becomes one of few outlets available to him.

These are merely mentioned to indicate that the entire patient should receive treatment rather than just the appetite. If a patient can be made to feel well with adequate energy and freedom from nervous irritability and feelings of inferiority, he will be far better able to handle the forces which lead to overeating.

S. C. FREED, M.D.
San Francisco

► TO THE EDITORS: Overeating and obesity are, in almost all instances, results of emotional factors. Obese individuals, because of their personality make-up, resort to food to help them cope with their emotional problems. These problems may be legion. In general, overeating occurs whenever there is anxiety, emotional deprivation, or repressed anger. In addition, the obese state may be maintained because of certain associated secondary gains. For example, obesity may represent: [1] an excuse to avoid growing up emotionally; [2] a feeling of bigness and hence security; [3] a protection against illness; [4] a defense against sexuality; or [5] a manifestation of low self-regard.

Obesity can be relieved only when overeating stops. And overeating will stop only when the emotional factors causing the overeating have been eliminated. The physician can, by taking a careful history, uncover some of the emotional factors in the patient's overeating. A superficial psychotherapeutic approach may be beneficial in many instances.

If the problems are deeprooted, however, expert psychiatric help should be recommended. Dr. Brosin verifies a common observation: Persons who have lost weight on a reducing diet alone frequently regain their lost weight. It is almost axiomatic that as long as emotional problems exist, treatment of obesity will be unsuccessful.

In fact, mechanical reduction of weight may even be psychologically harmful. Food represents an emotional need to the obese person. Unless this need is removed or substitute applied, it may be unwise to deprive the patient of his crutch—food.

In my experience, I have found that offering obese patients a low-calorie diet is of very little value. Obese patients are notoriously rebellious and resent any restrictions placed on their food intake. Only when they have lost the need to overeat, will they be psychologically ready to reduce. Then, they usually decrease their caloric intake voluntarily, without adhering to any prescribed dietary regimen.

STANLEY W. CONRAD, M.D.
Philadelphia

► TO THE EDITORS: The seeds of obesity are often laid in childhood. The overanxious mother who stuffs her children and worries about their lack of appetite; the immature parents who fail to discipline children in food habits as well as in general conduct; the parents who create

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tensions in the home by their own psychoneurotic behavior and are bad examples in eating and drinking—these frequently produce the emotionally disturbed children who, among other things, become confirmed food addicts.

To handle these patients successfully, the physician must frequently become a clinical psychologist or psychiatrist. He must be prepared in his own mind to deal with discouragement, frustration, and irrational behavior in his patients. To alleviate the psychoneurosis and compulsive eating habits is frequently his chief function.

Appetite is by no means constant. It varies greatly with emotions, environment, sights, and smells. It is subject to wide fluctuations through conditioning. Curtailment of food intake diminishes the appetite and, conversely, a large intake of food increases it.

More people grow fat than lean from unpleasant emotions. Many people experience a marked emotional uplift from taking food, particularly such foods as candy, ice cream, and pastries. With the cultivation of an appetite for sweets and without sufficient self-discipline or motivation to control weight, the results are sometimes marvelous to behold.

To "comfort thine heart with a morsel of bread" is one thing. To become a food addict is the sequel to an overabundance of such "comfort."

Close observation, counseling and morale-building by the physician, and such diets and drug adjuvants as may be required will often permanently reverse the process of weight increase and rehabilitate these unfortunate victims of their own emotions. Sympathetic understanding and long-time observations are necessary to maintain the improved nutritional and emotional status. The physician who merely hands his patient a diet and dismisses him with good wishes for success accomplishes nothing. In my experience, visits once or twice a week are required to obtain best results.

JAMES J. SHORT, M.D.
Glendale, Calif.

► TO THE EDITORS: It is a popular notion, reinforced by constant repetition, that obesity is due to overeating induced by emotional disturbances. The significance of heredity, hypothalamic pathology, hypoglycemia, or the inability of the tissues to utilize glucose as causes for overeating are passed over lightly. Organic disease or metabolic disorders are excluded on the basis of perfunctory investigations, whereas more searching studies will often reveal the retention of salt and water or metabolic carbohydrate abnormalities.

Taylor and Keys showed that the body of a person kept on semi-starvation diets for months can adjust itself to the reduced food intake by decreasing energy expenditure. Through increased metabolic efficiency or other means, the body maintained its weight at 75% even though the caloric intake was only 45% of the original. Morris and

*(Continued on page 174)*

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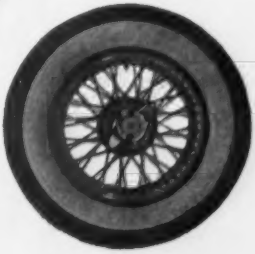
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ORAL SUSPENSION

associates, by selective breeding of rats, produced strains with high and low metabolic efficiency in food utilization, the former storing a far greater percentage of the ingested calories.

According to isotope studies, atomic interchange within the molecule and the turnover of molecular fragments within the living protoplasm are unexpectedly rapid. The energy required for these processes increases with faster and diminishes with slower turnover, without this being necessarily measurable in terms of respiratory gas exchange.

According to the prevalent concept of obesity, the fat tissue is looked upon as a kind of inert storage tank. Actually, this tissue has definite function and considerable autonomy, greater in some specialized areas than in others. Thus, the localized fat depots in certain types of obesity—female fat distribution, castration, Cushing's disease, and so on—are more resistant to dietary weight reduction than the overall fat but such local fat pads disappear with their hormonal causes. Hormonal influences are operative in both the deposition and mobilization of accumulated fat. They are experimentally demonstrable in the adrenalectomized animal which loses more weight than its unoperated control and gains more rapidly upon administration of cortical extract.

A starvation diet of 450 to 500 calories reduces the weight of anyone, but such diets cannot be kept up indefinitely and their termination is followed by rapid weight gain. On the other hand, well-planned diets of 1,100 to 1,200 calories can be adhered to permanently and are suitable to reduce and maintain weight if other necessary hormonal or medicinal requirements are met. We demonstrated this in hundreds of cases previously treated unsuccessfully in the orthodox dietary manner. At the same time there was relief of a variety of neurotic manifestations which were apparently induced by the infirmity and unsightliness of the patient. In other words, the neurosis proved to be the consequence rather than the cause of obesity.

MAX A. GOLDZIEHER, M.D.
New York City

## Solids in the Infant Diet*

**QUESTION: When should solid food be added to an infant's diet?**

*Comment invited from*

HARRY A. WAISMAN, M.D.
WALTER W. SACKETT, JR., M.D.
HAROLD D. LYNCH, M.D.
ROBERT L. JACKSON, M.D.
E. H. WATSON, M.D.

► TO THE EDITORS: Dr. Robert W. Deisher and Shirley S. Goers call to our attention the perennial problem of feeding solid foods early. Several important factors must be considered before deciding on the best course.

The existing tendency to incorporate solid foods in the infant diet very early reflects our current haste and compulsiveness about all endeavors. These are times when we must do things more rapidly and also do them earlier. The emphasis

*MODERN MEDICINE, Nov. 15, 1954, p. 134.

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DOSAGE: 1 to 2 tablespoonfuls on arising, repeated every three hours or whenever nausea threatens.

IMPORTANT: EMETROL must always be taken *undiluted*. Fluids should not be allowed for at least 15 minutes after each dose.

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***In epidemic vomiting*** (acute infectious gastroenteritis, intestinal "flu"), EMETROL works rapidly, even in refractory cases; control is usually established with the first few doses, "often with a single dose."[2]

1. Crunden, A. B., Jr., and Davis, W. A.: Am. J. Obst. & Gynec. 69:311, 1955. 2. Bradley, J. E., et al.: J. Pediat. 38:41, 1951. 3. Tebrock, H. E., and Fisher, M. M.: M. Times 82:271, 1954.

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*Literature and sample on request*

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on feeding solid foods early represents this tendency.

We are being forced to start these infants on solid foods earlier in order to speed the growth process or to "catch up to the neighbor's baby." Unfortunately, however, no advantage to the infant has ever been demonstrated by early solid feeding. The work of the authors demonstrates that neither growth, nutrition, nor blood values are significantly affected.

While this in itself would be good enough reason to start foods at the more traditional time of two or three months, a knowledge of growth and development of the infant would suggest that the child is not always able to manipulate the bolus of food and propel the food from the tip to the back of the tongue and thus initiate the swallowing mechanism. It is the experience of all mothers and all physicians that the newborn infant is unable to chew efficiently and that the food is usually pushed back out by the tongue.

Too little attention is paid to the individual needs of a particular infant. Some rapidly growing babies need solids early, and others do splendidly on milk alone. The infant's progress should help the astute physician to decide when solids should first be given.

If growth and development are considered together with the individual nutritional needs of the infant, we have a sound basis for deciding the program of solid feeding for infants.

HARRY A. WAISMAN, M.D.
Madison, Wis.

► TO THE EDITORS: In a series of over 500 babies observed during a five-year period, the early introduction of solid food has proved most advantageous. The benefits derived from such a procedure, which was introduced as early as the second day of life, are much more apparent to the physician in general practice, who is concerned with the entire family, than to the physician limited to pediatrics.

Inability to tolerate or assimilate solids given by spoon as early as the second day of life is no greater than that noted in previous years when solid foods were introduced as late as 3 to 5 months of age. Indeed, the introduction of solid foods at later dates was ofttimes accompanied by an expression of despair on the part of mothers. A study of weight increments and blood levels also indicates no great difference.

If one would accept the parents' observations, one would consider well worth while a study of the possibility of healthier and faster developing babies emerging from such a procedure. Indeed, Gough of Vancouver has reported a decrease in respiratory infections in infants fed solids from the first few days of life.

It has been observed that infants receiving solid foods during the neonatal period seldom require supplementary vitamins and minerals, inasmuch as these substances occur in their natural form in solid foods. Yet, the same physicians who decry the early addition of solid foods as an unnatural practice have no hesitancy about prescribing synthetic

*(Continued on page 180)*

## Q — Are ACTH and cortisone (or hydrocortisone) practically one and the same?

## A — *No*—There Is A Difference!

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Only the therapeutic effects of ACTH and cortisone are practically alike. However, there is a decisive antagonism between ACTH and cortisone regarding function and tissue structure of the adrenal cortex.

ACTH therapy stimulates the adrenal cortex to produce larger amounts of steroids with a proportionate increase of the secretory tissue to prevent exhaustion.

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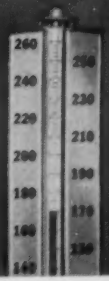
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vitamin and mineral preparations for these babies.

It is a further observation that the early introduction of solid foods plays an important part in the elimination of feeding problems in both infant and child. At no time has there been any evidence that these infants are more subject to the development of allergies; indeed, the rotation of foods from the first few days of life would, according to most authorities, be a deterrent to sensitization by foods.

WALTER W. SACKETT, JR., M.D.
Miami

► TO THE EDITORS: The addition of solid foods in the early weeks of the infant's life accomplishes very little nutritionwise. Calculation of the amount of nutrients available to the infant will reveal that an amazingly small percentage—less than 10%—can come from the spoon in the early months. In other words, over 90% of the small infant's nutrients must come from the formula, an argument for a well-balanced formula instead of whole cow's milk.

While the small infant is geared for sucking, some will accept the spoon readily at a few weeks. On the other hand, many resist this method of feeding for months. In the latter group many conflicts arise between mother and infant over feeding, especially when the mother is determined to compete with her friends. Mothers should be told that many small infants may resist the spoon and that spoon feeding should be undertaken very casually.

Solids may be introduced any time between the first and fourth months, according to the prevailing practices in the neighborhood. Mothers are cautioned against giving two or three kinds of fruits and vegetables at the same feeding. A multiple choice adds to the confusion and infants are often found getting three or four cans of the fruits and vegetables daily. Hence the high incidence of carotenemia.

After spoon feeding is firmly established, no more than two different foods should be given at an individual feeding. I like to include one of the important protein foods at each spoonfeeding and suggest the following combinations:

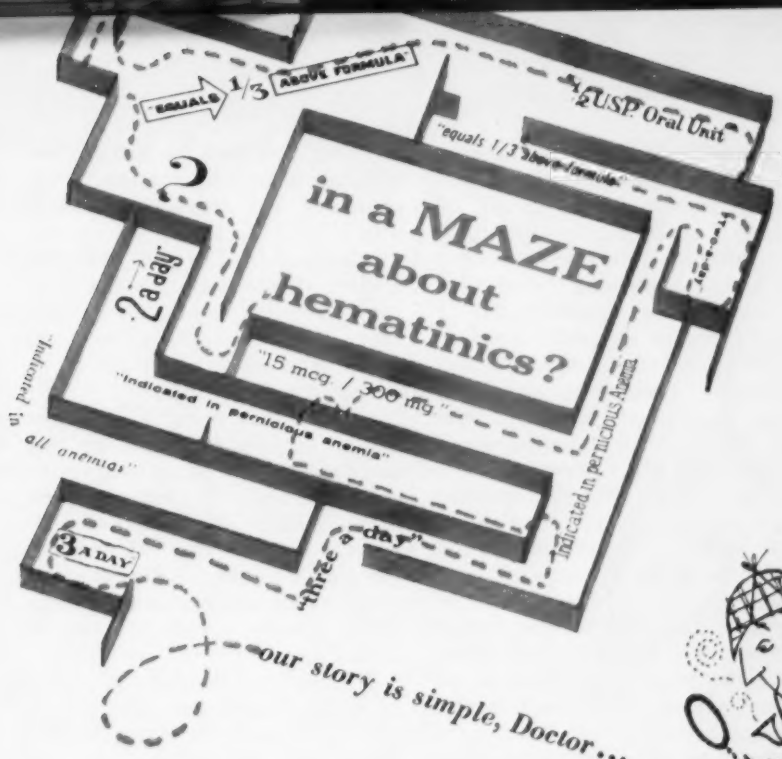
- Cereal and egg yolk
- Fruit and cottage cheese
- Meat and vegetables

This makes the feeding process simpler for the mother and assures a better balance of nutrients for the infant.

HAROLD D. LYNCH, M.D.
Evansville, Ind.

► TO THE EDITORS: Babies fed human or cow's milk exclusively or milk and carbohydrate mixtures for many months do not do well. Milk is deficient in several nutritional essentials, especially vitamin D and iron and, in the case of prepared cow's milk, vitamin C. Terminal sterilization destroys a larger proportion of the heat-labile vitamins than does the quick boiling method.

As nutritional knowledge has increased, solid foods have been advocated for the infant's diet earlier and earlier to meet known nutri-






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ONE CAPSULE DAILY

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| Intrinsic Factor-Vitamin $B_{12}$ Concentrate | 1 U.S.P. Oral Unit |
| Folic Acid | 2 mg. |
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| Ascorbic Acid | 100 mg. |
| Molybdenum | 1.5 mg. |
| Cobalt | 0.5 mg. |
| Copper | 0.5 mg. |
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| Zinc | 0.5 mg. |

Bottles of 30 and 100
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**Only** one-a-day hematinic which conforms to exact U.S.P. requirements for Intrinsic Factor-$B_{12}$, as defined by the Anti-Anemia Preparations Advisory Board.

**Only** one-a-day hematinic which contains therapeutic amounts of all known hemapoietic factors, including the "four extra essentials."

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tional needs. The diet of the artificially fed infant should have 400 units of vitamin D and 25 mg. of vitamin C added shortly after birth. The full-term infant should have iron or iron-containing foods added to the diet at approximately 3 months of age to avoid depletion of iron stores. At this age, the baby particularly needs iron and some of the B vitamins, especially thiamin. The exact protein requirement of the infant is not known.

Consequently, protein-containing foods such as egg yolk and sieved meat are frequently advised, particularly for infants receiving proprietary formulas with lower content of protein. Babies vary widely in their ability to handle solid foods, but most infants have little or no difficulty after the second month. In recent years, there has been a tendency to add solid foods earlier than the third month and, on the whole, the infants have tolerated them well. However, no definite scientific data support the need for such foods before the third or fourth month of life, provided the infant is receiving an adequate protein intake, the usual vitamin supplements, and additional thiamin if the formula is being terminally sterilized.

ROBERT L. JACKSON, M.D.
Columbia, Mo.

► TO THE EDITORS: There has been a continuing tendency toward the early addition of a variety of foods in the infant diet. Sometimes this has seemed to approach absurdity. By and large, the additions have probably benefited the infant. Nutritional anemia is certainly encountered less frequently than it was a few years ago. Of course, this has resulted, in part, from the control of infections, but the early use of strained vegetables, fortified cereal, and strained meats has given the infant a much better dietary by the third month of life.

I think that there is only one reason for adding cereal or any other solid to the infant food intake before the end of the second month. Many infants will have less colic when a small amount of cereal is given once or twice a day. It seems to have become the custom to begin cereal as early as four or six weeks in our area.

I cannot see the need for haste or social competition in the addition of foods. There has been a great deal of pressure to add strained meats at earlier and earlier ages—even to the food intake of premature infants. There has been no proof that the protein of meat is superior to the protein of milk. Certainly protein is more expensive when it is purchased as a strained meat.

My own practice has been to add cereal protein during the second and third month and a variety of fruits and vegetables after the spoon-feeding technic has been well established with cereal. Meats can be added along with the vegetables at about the same time. Milk and vitamin supplements still remain the bulwark of infant feeding for the first four months.

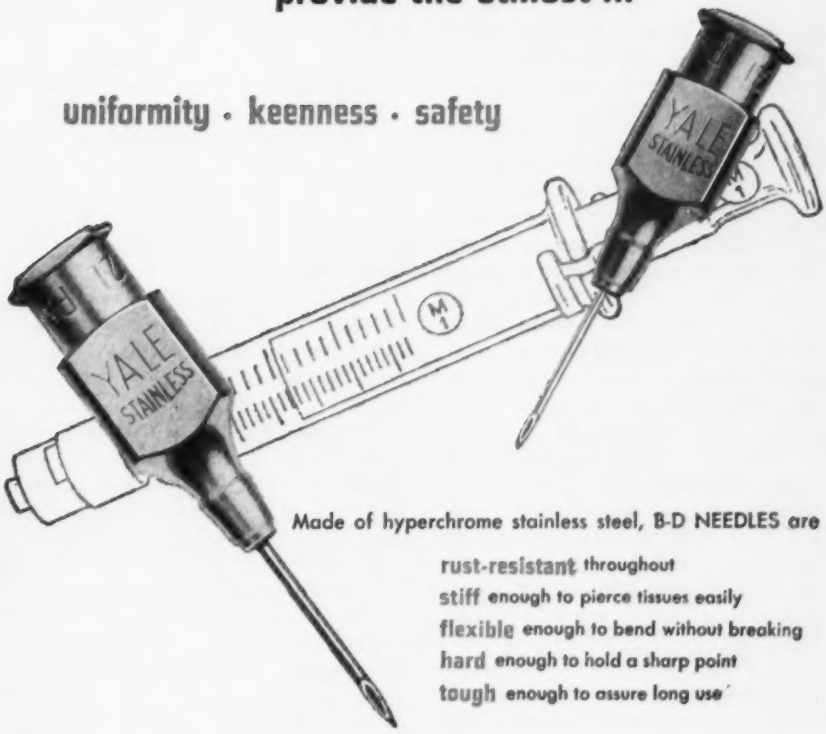
E. H. WATSON, M.D.
Ann Arbor, Mich.

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## Hydrocortisone for Bronchial Asthma*

**QUESTION: Under what circumstances should hormonal therapy be used for bronchial asthma?**

*Comment invited from*

MAURICE S. SEGAL, M.D.
THERON G. RANDOLPH, M.D.
CARL E. ARBESMAN, M.D.
ALEX S. FRIEDLAENDER, M.D.

► TO THE EDITORS: Although corticotropin and the corticosteroids have not fulfilled the early hopes of a cure-all, these hormones are nonetheless important and powerful agents in our therapeutic armamentarium, as Drs. Hylan A. Bickerman and Alvan L. Barach have reported. They should be available for restricted and considerate use in patients with severe seasonal exacerbations of bronchial asthma and in those with intractable chronic bronchial asthma or status asthmaticus, but only when all the other therapeutic and physiologic measures which may be indicated have been adequately employed. These include continuous intravenous infusions of aminophylline; intermittent positive pressure breathing with bronchodilator aerosols; the use of therapeutic gases under pressure; bronchoscopic aspiration; antimicrobial agents; iodides; and hyposensitization with allergic cleanliness.

Hormonal therapy is best employed in conjunction with the above measures to secure a more effective and lasting remission with the lowest possible dosage schedules and freedom from side reactions. Most patients derive temporary improvement, a smaller number obtain more lasting remissions; at best, the remissive state is partial rather than complete. We generally advocate a short course of therapy as a safeguard against serious side effects.

Prolonged use of these hormones can produce serious metabolic and hormonal changes. Unfortunately, the physician pushing therapy may find himself like the man holding the tiger's tail because of the many hazards and problems attendant on withdrawal therapy. The simultaneous use of an antimicrobial agent, such as penicillin or Tetracyn, is advisable when bronchitis is associated or the patient is in the status state because of the tendency to harbor infection in the bronchi and because of damage to mucosa and parenchyma of the lung with resultant impairment of ciliary function, bronchial peristalsis, and so on.

The ambulatory patient is best treated with oral hydrocortisone in divided doses or with ACTH in gelatin form in a single dose daily. The hospitalized patient may be treated with lyophilized ACTH, combined with aminophylline in glucose and distilled water, administered slowly intravenously; this technic permits the smallest possible dose to accomplish the desired effect in the shortest period of time. In the critically ill patient with manifestations of peripheral vascular collapse, we have found intravenous hydrocortisone of lifesaving value. When intravenous hormonal therapy is being given, it is most important to study the patient's electrocardio-

*MODERN MEDICINE, Dec. 15, 1954, p. 99.

## Tinea Cruris

***Sites and Appearance of Lesions:*** Lesions appear on upper inner surfaces of thighs, perianal and pubic regions. The lesions appear as sharply marginated plaques with a tendency to central healing, slight scaling and lichenification. The margins are often raised and show greater scaling and vesiculation.

***Treatment:*** In all but acute cases of tinea cruris, 'Pragmatar' should be rubbed in thoroughly once or twice daily. Pragmatar's mild keratolytic action promotes the desquamation of epidermis harboring infecting fungi, thus aiding the skin to heal promptly.

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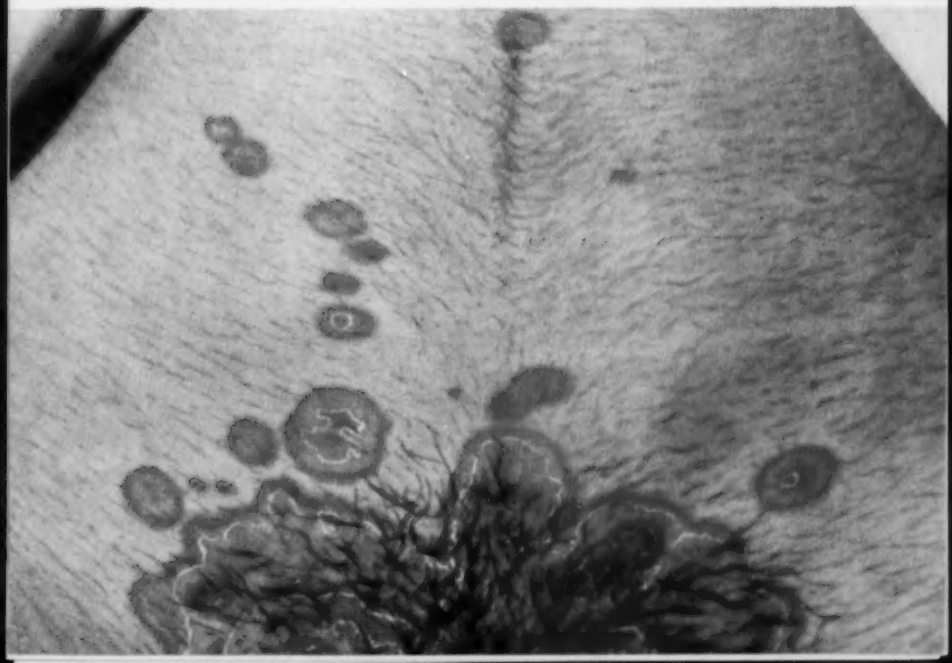
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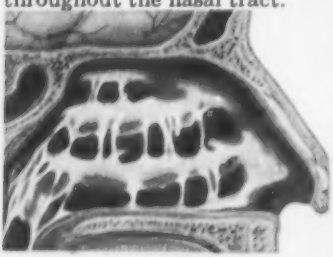
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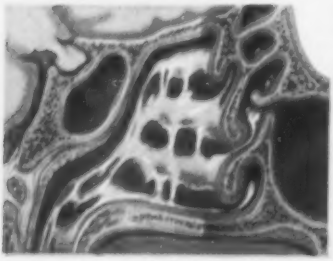
*Smith, Kline & French Laboratories, Philadelphia 1*

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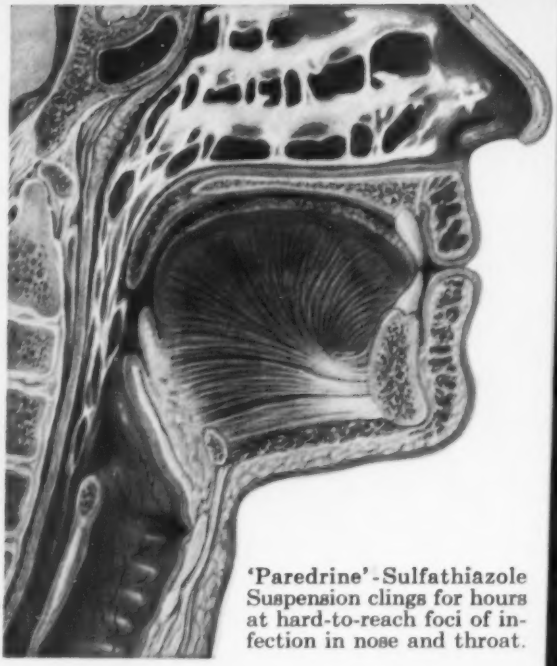


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Suspension drifts over nasopharynx, coating inflamed areas.



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Instilled intranasally, 'Paredrine'-Sulfathiazole Suspension deposits a fine, even frosting of microcrystalline sulfathiazole throughout the nasal tract. Unlike solutions, this highly bacteriostatic coating does not quickly wash away, but remains for hours, clinging to the inflamed mucosa wherever ciliary activity is impaired by infection. *Bacteria in postnasal drip are neutralized before they can reach the nasopharynx and pharynx to intensify the infection.*

Moreover, part of the Suspension drifts down over the nasopharynx and pharynx, giving you the potent, prolonged bacteriostasis of microcrystalline sulfathiazole precisely where it is needed most, *at the site of infection in the throat.*

# Paredrine*-Sulfathiazole Suspension

*Smith, Kline & French Laboratories, Philadelphia*

*T.M. Reg. U.S. Pat. Off. for hydroxyamphetamine hydrobromide, S.K.F.

grams and electrolytes, with particular reference to potassium imbalance. Adequate potassium intake —oral or intravenous—and antimicrobial coverage must be maintained because of the hazards of rapidly developing hypopotassemia and runaway infections in these patients.

In one group of 192 patients, almost entirely hospitalized with intractable bronchial asthma, 281 courses of ACTH therapy were administered intramuscularly and intravenously. The average total doses and days of therapy were as follows: 605 mg. over two and one-half to nineteen days with the original intramuscular preparation; 160 mg. over two to seven days with ACTH gel; and 70 mg. over one to nine days with the intravenous preparation. The results were as follows: The immediate therapeutic effects were considered excellent in 59%, with good effects persisting for longer than four weeks; 25% demonstrated good therapeutic effects persisting two to four weeks; 13% showed fair results persisting one to two weeks; and 3% were considered failures because improvement persisted less than one week after therapy was stopped.

A second group of 118 patients, almost entirely confined to home and ambulatory, received corticosteroid therapy. The results were considered satisfactory in 68%. The best results were noted in patients with seasonal asthma; 87% had satisfactory results. In patients with perennial asthma 58% had satisfactory results.

On the whole, better results were noted with hydrocortisone. The improvement was noted more rapidly, the dosage required was considerably smaller, and it was generally easier to restore balance when treatment had been stopped. On the other hand, evidence of hypercorticism was noted sooner with hydrocortisone. We are hopeful that the newer derivatives will be more effective with lower dosage and with greater freedom from the more serious side effects.

For the management of associated vasomotor rhinitis, recurring sinobronchitis, and nasal polyposis, we have found the nasal use of hydrocortisone aerosols most helpful. These may be employed as nasal sprays for milder symptoms and as continuous aerosols with air pump or oxygen flows for more severe symptoms. The topical management of these trigger mechanisms so often contributing to the intractable state may bring considerable relief to the asthmatic patient.

MAURICE S. SEGAL, M.D.
Boston

► TO THE EDITORS: In my opinion, hormone therapy with ACTH, cortisone, or related hormonal materials is not indicated in chronic bronchial asthma in lieu of establishing a specific allergic diagnosis and treatment based thereon.

Such therapy is not only an unsatisfactory long-term therapeutic approach to chronic allergic illness but it usually is considerably more difficult to obtain the necessary cooperation to diagnose the condition

*(Continued on page 188)*



acute low back



painful shoulder



muscle cramps



arthritis



stiff neck

to **help more** of your **patients**

with **rheumatic pain** and **spasm**

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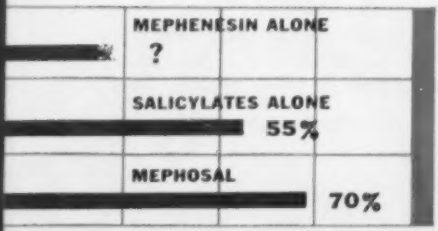
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**more comfort-in-motion**

**more freedom from danger of disablement**

in **more cases** with

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**relaxant** mephenesin "solubilized" by **analgesic** sodium salicylate

**Mephosal** *gives rapid, more predictable relief in more cases because*

1. The mephenesin in **Mephosal** is freely and rapidly soluble*... **more rapidly available to relax muscle spasm.**
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3. The comprehensive attack on both pain and spasm with **Mephosal** breaks the vicious pain-spasm cycle more effectively.

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specifically after one or more courses of ACTH, cortisone, or the like have been given.

Either ACTH, cortisone, or hydrocortisone may be indicated for symptomatic relief in intermittent attacks of acute bronchial asthma, but even here such treatment should not be considered an adequate substitute for establishment of a specifically oriented therapeutic program.

THERON G. RANDOLPH, M.D.
Evanston, Ill.

► TO THE EDITORS: Hormonal therapy should be used for chronic intractable asthma with wheezing and coughing when agents such as epinephrine, aminophylline, ephedrine, and iodides are of little or no avail. The steroids, at the beginning of treatment, should be used in large dosages—100 to 300 mg. per day for cortisone and 80 to 240 mg. per day for hydrocortisone—in order to get the patient over the hump of the acute allergic emergency. The dosage may then be lowered gradually. Patients can be maintained for many years on a dosage which will just prevent them from having considerable difficulty. This dosage may vary from 25 to 75 mg. of cortisone or 20 to 60 mg. of hydrocortisone daily.

Another indication for hormonal therapy is acute status asthmaticus. The use of intravenous ACTH or intravenous hydrocortisone will very often help the patient considerably. However, it must be remembered that six to twenty-four hours is required for these hormones to become effective, and epinephrine, aminophylline, and even bronchoscopy are still necessary during the acute emergency and until the steroids begin to take effect.

Another important use of the hormones is for intractable seasonal bronchial asthma. Short-term therapy is indicated. For example, during a short pollen season, when a patient is not benefited from hyposensitization therapy, steroids are definitely indicated. I should like to stress that hormonal therapy, although a distinct adjunct and of great help to the doctor and to the patient in the treatment of bronchial asthma, is not a substitute for specific management. Avoidance of and specific hyposensitization with the allergens is most important. Likewise, determining infection and treating the infection with antibiotics is also very important. However, in the indications mentioned above, the hormones certainly have been a tremendous boon to the asthma sufferer.

CARL E. ARBESMAN, M.D.
Buffalo, N.Y.

► TO THE EDITORS: Hormonal therapy should not be the initial approach in the management of bronchial asthma. Its use is justified only after other time-honored measures have proved unsatisfactory for control. Further, such treatment should only be used in those patients who can be kept under close observation, as in the hospital, or who are able to consult with the physician in his office or clinic at

*(Continued on page 192)*

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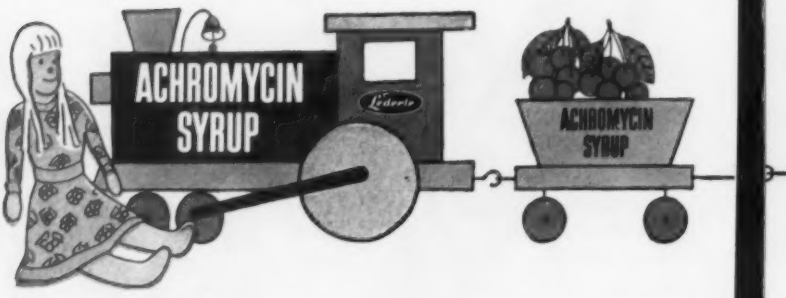
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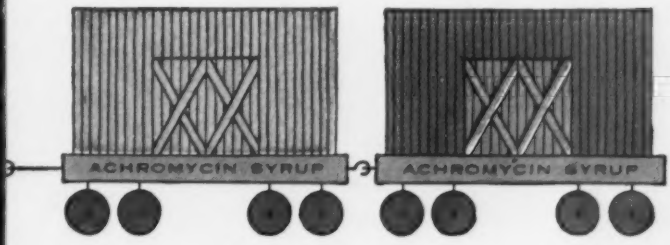
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ACHROMYCIN broad-spectrum • rapid diffusion • prompt control of infection • well tolerated • effective against Gram-positive and Gram-negative bacteria, rickettsiae, spirochetes, and certain viruses and protozoa.

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*American Cyanamid company* Pearl River, New York

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frequent intervals while under such therapy.

The use of these agents is rarely necessary in mild cases of bronchial asthma, whether seasonal or nonseasonal, and should be reserved primarily for those patients in status asthmaticus. When used, this therapy ought not be considered a final form of treatment, to the exclusion of bronchodilator and expectorant drugs and antibiotics necessary to control secondary bronchial infection. A thorough search for causative allergic agents must still be instituted and the indicated specific allergic management carried out.

When hormonal agents are necessary, it is desirable to reduce the dosage as soon as possible in a step-down fashion, maintaining the patient on the minimal effective daily dose. The choice of the hormone depends to a great extent on whether the patient is hospitalized or ambulatory. Maintenance of good control by injection therapy is more difficult in the patient who is ambulatory.

Initial therapy with injections of ACTH in the hospitalized individual may later be replaced by oral forms of cortisone and hydrocortisone when the patient is ambulant. In our experience, the required dosage of hydrocortisone is close to 80% of cortisone requirements in the same patient.

ALEX S. FRIEDLAENDER, M.D.
Detroit




*". . . so then I said to Josephine, 'Josie,' I said, 'when I get back from Waterloo, you and I are going out and really celebrate.' "*




## "Winters are getting colder!"

Many persons above middle age are hypothyroid and don't know it. Worse, because their complaints are often vague and misleading, the attending physician may also be kept in the dark, at least temporarily.

Diminished cold tolerance, obesity, fatigue, dryness of skin and hair are sometimes the only presenting symptoms "and the elderly patient, resigned to the infirmities of age, is thankful that his discomforts are no more severe."*

With properly controlled thyroid therapy, however, there often occurs a striking change; thyroid "restores the aging individual's zest for living, increases his productivity and will probably retard degenerative processes."*

In such patients, it is particularly important to avoid the dangers of inadvertent overdosage. Because Proloid is assayed twice, chemically and biologically, an unvarying dosage response is assured. Virtually pure thyroglobulin, Proloid can be prescribed in the same amounts as ordinary thyroid, whenever thyroid is indicated.

Available in ¼, ½, 1, 1½, and 5 grain tablets and as powder, for compounding.

* Kimble, S. T., and Stieglitz, E. J.: Geriatrics 7:20 (Jan.-Feb.) 1952.

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*the improved thyroid*

**WARNER-CHILCOTT**

# Diagnostix

*Here are diagnostic challenges presented as they confront the consultant from the first clue to the pathologic report. Diagnosis from the Clue requires unusual acumen and luck; from Part II, perspicacity; from Part III, discernment.*

## Case MM-284

### THE CLUE

ATTENDING M.D: I would like you to see a 48-year-old woman in the medical ward. She was first admitted to this hospital four weeks ago after a two-week period of fainting spells. No diagnosis except heart block was made during her week's stay here, and she had no spells while in the hospital. She was sent home, but eight days later she had a syncopal attack and was readmitted. She has been in the hospital twelve days now, and today she has a temperature of 101° F. This was thought by the resident to be indicative of an upper respiratory infection, but I wonder if it is not a part of the patient's primary illness.

VISITING M.D: What are the other details of her condition?

ATTENDING M.D: She was in good health until the present illness. Each attack started with nausea, headache, photophobia, and slight vertigo and then consciousness was lost for one to three minutes. Afterward, the patient felt weak and fatigued. Her blood pressure is 150/100.

VISITING M.D: How long has she had hypertension?



ATTENDING M.D: We don't know. She has not been to a doctor for ten years.

VISITING M.D: Have you decided on a tentative diagnosis?

ATTENDING M.D: No.

### PART II

VISITING M.D: *(Examining patient)* She appears to be in good health and not distressed. Blood pressure is 145/100, and the head and neck are normal. Fundi are negative, lungs are clear, and the heart is not enlarged. A grade III harsh systolic murmur can be heard over the entire precordium but is loudest at the second interspace to the left of the sternum. The rest of the physical examination is negative except for the pelvis, where small nodular mas-

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*T. M. REG. U. S. PAT. OFF.

ses are formed in the right culde-sac. Did you feel them?

ATTENDING M.D: No, but I believe I can detect them now. What do you think they are?

VISITING M.D: I don't know. They don't feel like malignant nodules, but one is never sure. Is there any clue as to the possibility of cancer?

ATTENDING M.D: No. Besides, the present illness occurred rather suddenly.

VISITING M.D: The time sequence is somewhat against malignant disease, but don't forget that metastases can cause sudden symptoms from a quiet primary lesion. What is the family history?

ATTENDING M.D: Negative. Her parents both died long ago from unknown causes. She has a brother who is well. The woman is married and occasionally works as a domestic helper.

VISITING M.D: Has she been exposed to any diseases . . . tuberculosis, for example?

ATTENDING M.D: Not that I know of.

VISITING M.D: What were the laboratory findings?

PART III

ATTENDING M.D: Red cell count, 4,500,000; urinalysis, normal; leukocyte count, 12,000 with a normal differential count; serologic tests for syphilis, negative; blood sugar and blood urea nitrogen, within normal limits; chest roentgenographic examination, normal.

VISITING M.D: And the electrocardiogram?

ATTENDING M.D: The tracings on first and second admissions are the same: a 2:1 auriculoventricular heart block with a right bundle-branch block. The T-wave inversion in lead $V_2$ was thought to be indicative of a small anteroseptal infarct, although it could be a bundle-branch block.

VISITING M.D: Did leukocytosis occur before the fever?

ATTENDING M.D: Yes. It has varied from 10,000 to 14,000.

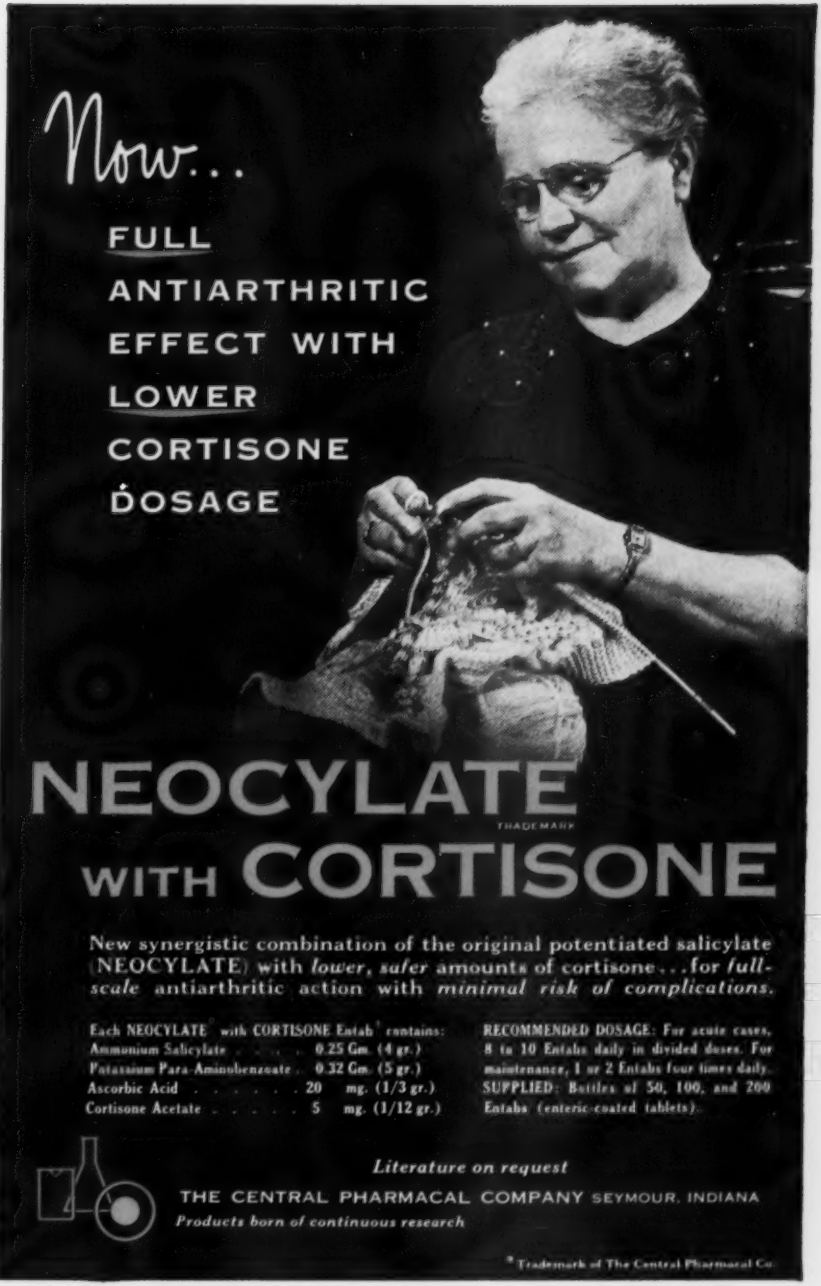
VISITING M.D: What therapy has been given?

ATTENDING M.D: Ephedrine sulfate and oxygen, without effect on either the symptoms or the electrocardiogram.

VISITING M.D: I note that the pulse was 38 on first admission and 20 on the electrocardiogram, indicating complete auriculoventricular block. We know that the symptoms refer to a lesion in the conducting system of the heart, but what is the etiology? Infarct? But no other symptoms substantiate this. Hypertension does not explain the nodules in the pelvis. I would hesitate to recommend laparotomy because of the heart. Could this be an infection if it is not primarily vascular or secondarily malignant? Did you determine sedimentation rate?

ATTENDING M.D: It was 40 mm. in the first hour. The only other finding was a positive Mantoux, but this is of little help.

VISITING M.D: Perhaps, I'm not sure. *(Suddenly the patient emits a muffled scream and has a generalized convulsion without focal signs.)*


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PART IV

VISITING M.D: *(Three days later)* I note from the chart that the patient has had 3 more grand mal seizures. Her temperature has ranged from 100 to 102.4° F. It looks more and more like an infectious process to me. Antibiotics should be administered.

ATTENDING M.D: She was given streptomycin last night. *(The patient suddenly has a fifth seizure after a syncopal attack. Blood pressure is unattainable and the pulse 32. Oxygen is begun and epinephrine administered. The woman fails to respond and dies.)*

PATHOLOGIST: *(Three days later, showing specimen)* Beneath the epicardium and in the myocardium and intraventricular septum are multiple clusters of moderately firm nodules 1 to 3 mm. in diameter. The endocardium and valve are clear. The only other findings are a mass high in the pelvis and some small nodules in the right cul-de-sac. The lungs are normal.

VISITING M.D: What are the microscopic findings?

PATHOLOGIST: There is active caseous tuberculosis in the pelvic mass and in the nodules in the pelvis and myocardium. Tubercle bacilli have been found in acid-fast stains from both lesions.

VISITING M.D: Myocardial tuberculosis is always secondary to another lesion, in this case, the pelvic disease.

PATHOLOGIST: Myocardial tuberculosis occurs in 3 forms: a grossly nodular type, such as this patient had; a miliary form; and a diffusely infiltrating variety. Sometimes, no symptoms are seen with myocardial tuberculosis, and I remember a case in which a tuberculoma of the myocardium failed to benefit from streptomycin, for there was no microscopic evidence of healing despite long therapy.

VISITING M.D: Clinically manifest tuberculosis of the myocardium is rare, and the lesion is usually diagnosed post mortem. From studies, it seems that the myocardium is involved in 0.25 to 4% of cases; about 1% is probably a fair figure. It can affect both auricles and ventricles, and symptoms depend upon the location. The important point is that we must never forget tuberculosis in the problem of differential diagnosis of unusual illnesses, and roentgenographically clear lung fields are not conclusive. The Mantoux test was the best clue we had but was discarded. This is a very important test.

---




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# *short* REPORTS

### Prevention of Fetal Narcosis

Intravenous administration of caffeine sodiobenzoate shortly before delivery appears to eliminate narcosis of the fetus due to maternal sedation. Dr. Chester L. Roberts of Glendale, Calif., suggests injection of 0.5 gm. of caffeine sodiobenzoate approximately fifteen minutes before delivery or immediately after administration of Metycaine lumbosacral block. Demerol and scopolamine are used during the early stages of labor to maintain adequate sedation at all times. When caffeine was administered to 250 women, tracheal catheterization was necessary for only 3 infants, 2 of whom had shortened cords wound around the necks; the other infant was delivered only four minutes after caffeine injection. Without caffeine, expected incidence of fetal narcosis would have been between 12 and 63.

Obst. & Gynec. 4:545-547, 1954.

### Depression of Lipoproteins

The level of low-density serum lipoproteins is reduced by prolonged administration of thyroid hormone. Small daily doses of 3 gr. of desiccated thyroid produce the lowest concentrations of Standard $S_f$ 0-12 and $S_f$ 12-20 serum lipoproteins after three weeks of therapy, report Dr. John W. Gofman and associates of the University of California, Berkeley and San Francisco, and the Stockton State Hospital. After approximately twenty-four weeks, the $S_f$ 0-12 lipoproteins have returned to pretreatment levels but $S_f$ 12-20 fractions remain depressed. Serum cholesterol levels parallel changes in the $S_f$ 0-12 class; no alterations are observed in the $S_f$ 20-100 and $S_f$ 100-400 groups.

J. Clin. Endocrinol. 15:73-80, 1955.

### Treatment of Skin Ulcers

Sanguinin, a dry powder of bovine red blood cells, has antibacterial and other properties that aid healing of purulent cutaneous ulcers. Amputation had been recommended for the first human patient to be reported, an elderly man with extensive chronic ulceration of the left lower leg and foot. Dr. Samchai Nilasena and associates of the University of Texas, Galveston, applied powder over the affected area in a layer 5 mm. thick. A dry bandage was employed, and the dressing was changed every two to seven days for several months. When pretibial and dorsal foot ulcers were reduced to 2.5 and 5 cm. across, skin grafts and gelatin boots were applied and the lesion healed completely.

Texas Rep. Biol. & Med. 12:1047-1051, 1954.

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## Control of Manic Psychoses

Administration of lithium salts may be valuable adjunctive therapy in the management of manic symptoms. In 38 patients given 24 to 48 mEq. of lithium daily, attacks became less frequent and shortened, motor and emotional levels decreased, and spontaneous neutral phases were prolonged for 14, report Dr. M. Schou and associates of the Aarhus University, Risskov, Denmark. Benefits indistinguishable from spontaneous remissions were observed in 18 individuals, and 6 were unaffected. Danger of lithium intoxication necessitates careful observation and biochemical control of the patients.

J. Neurol., Neurosurg. & Psychiat. 17:250-260, 1954.

## Stimulation without Insomnia

Relief of fatigue and elevation of mood are produced by a recently synthesized pipradrol compound, Meratran. Dr. Robert J. Antos of Phoenix reports that daily doses of 2 to 12 mg. relieve drowsiness associated with administration of drugs such as chlorpromazine, antihistamines, rauwolfia compounds, dihydrocodeinone, bromaleate, and barbiturates. Meratran also alleviates the lethargy associated with hypothyroidism, hepatitis, and other disorders. The stimulant is not related to ephedrine or amphetamine compounds and does not cause hyperexcitability or agitation, disturb sleep, depress appetite, or change blood pressure or pulse rate.

Arizona Med. 2:397-399, 1954.

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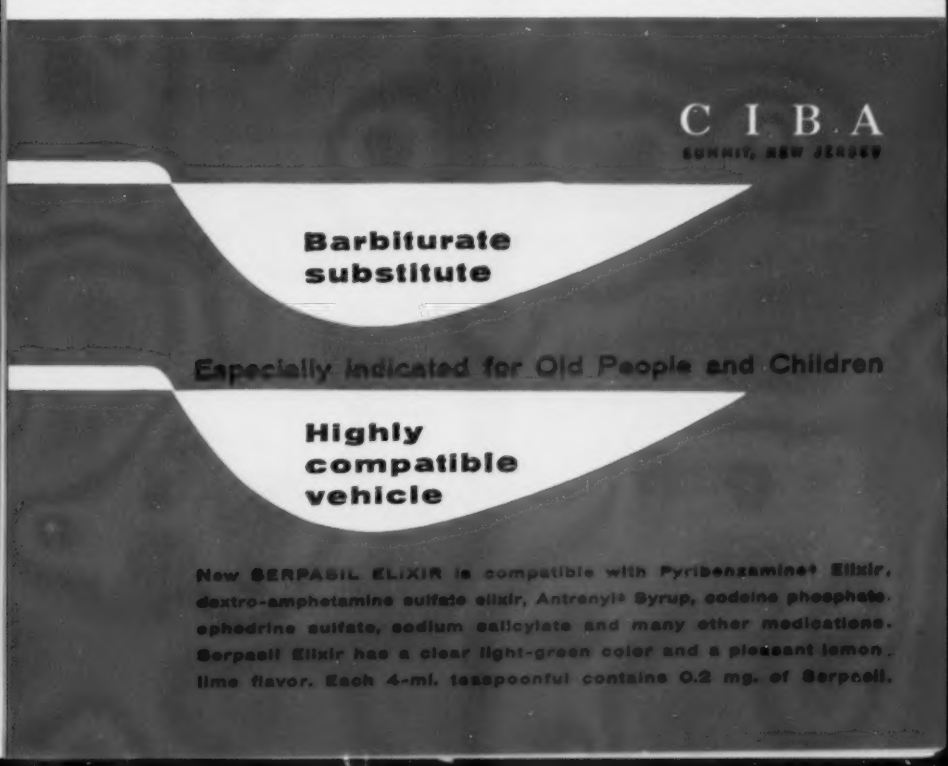
## Myocardial Revascularization

Implantation of an internal mammary artery directly into the wall of the left ventricle provides effective revascularization of ischemic myocardium. Internal mammary grafts produced significant improvement of angina and increase of work tolerance in 17 of 28 patients with coronary insufficiency, report Dr. Arthur Vineberg and associates of McGill University and the Royal Victoria Hospital, Montreal. Many individuals were able to return to hard physical labor for eight to sixteen hours daily. A group of patients without angina at rest had a mortality rate of 4.3%, whereas the group with status anginosus had a survival incidence of only 50%. Similar operations in dogs reveal extensive coronary-mammary anastomoses throughout the ventricular myocardium which are capable of revitalizing animals with coronary occlusion and infarcts. Mammary implantation in healthy animals prevents death from complete ligation of major coronary vessels.

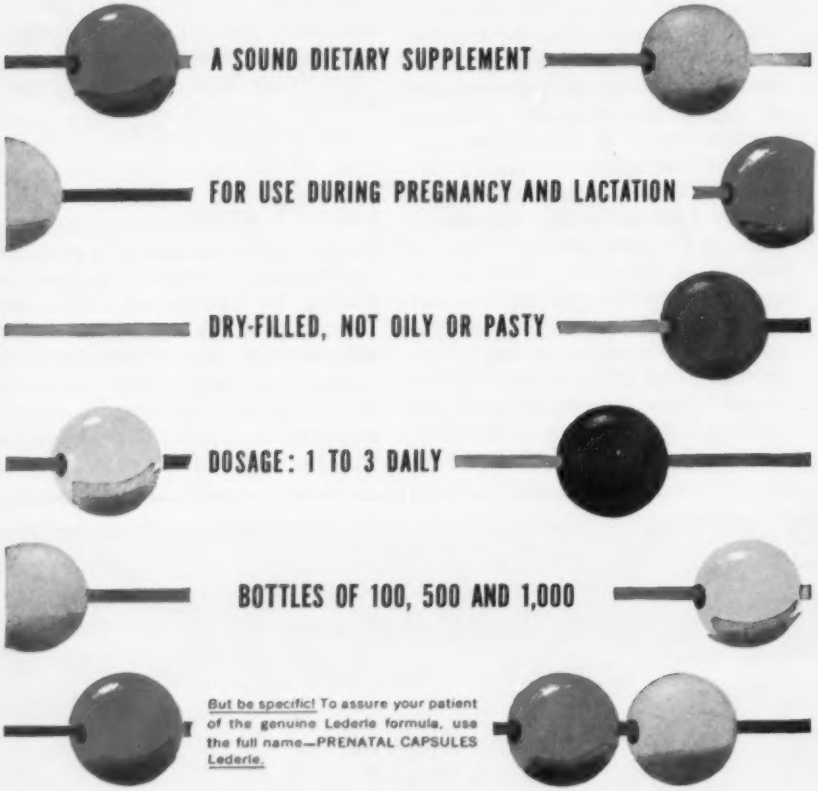
J. Thoracic Surg. 29:1-36, 1955.

## Cancer Therapy

A new irradiation center is planned for Baylor University Hospital in Dallas. The Theratron Cobalt 60 Beam Cancer Therapy unit, which weighs 8 tons, will be installed in a special building heavily insulated with lead and concrete. A supply of atomic radiation will be delivered with the unit in June 1955.

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| Thiamine | 2 mg. | Phosphorus (in $CaHPO_4$) | 190 mg. |
| Riboflavin | 2 mg. | Dicalcium Phosphate Anhydrous ($CaHPO_4$) | 869 mg. |
| Ascorbic Acid | 35 mg. | Iron (in exsiccated $FeSO_4$) | 6 mg. |
| Vitamin $B_{12}$ | 1 mcgm. | Ferrous Sulfate exsiccated ($FeSO_4$) | 20 mg. |
| Vitamin K (Menadione) | 0.5 mg. | Manganese (in $MnSO_4$) | 0.12 mg. |
| Niacinamide | 7 mg. | | |

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### Tolerance to Depressors

The hypotensive action of intravenous hexamethonium or tetraethylammonium diminishes and finally becomes pressor during short-term therapy with subcutaneous hexamethonium. Apparently an unknown intrinsic mechanism produces compensatory vasoconstriction so that individuals no longer respond to ganglionic blockade, believe Drs. A. S. Dontas and S. W. Hoobler of the University of Michigan, Ann Arbor. In the case of tetraethylammonium, pressor action may also be by direct vasoconstrictor action of the drug when concomitant depressor effects are inhibited. Injections of the depressor agents after development of tolerance produce slight changes in resting foot and forearm blood flow, indicating persistence of sympathetic tone. Cross tolerance also developed between other quaternary and tertiary-N ganglionic blocking agents, such as pendiomide and SU-1194, and extended to a lesser degree to the adrenergic blocking compounds, Regitine and Dibenzyline.

Circulation 10:887-895, 1954.




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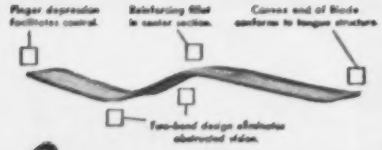
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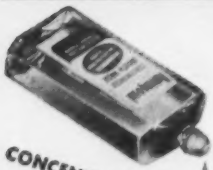
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## Metabolic Effects of Dextran

Over half of an injected dose of dextran is rapidly excreted during the injection period. A fraction of the drug remains in the circulation for a long time, however, and causes increased plasma volume as indicated by prolonged depression of venous hematocrit, find Drs. John R. Jaenike and Christine Waterhouse of the University of Rochester, N. Y. Nitrogen sparing and concomitant phosphorus retention and antiketogenic effects are transient. Prolongation of bleeding time and hemorrhagic tendencies may be observed among patients who receive large amounts of dextran.

Circulation 11:1-13, 1955.

## Intramuscular Hematinic

A recently synthesized dextran-iron preparation, Imferon, is rapidly absorbed by the intramuscular route and produces high serum levels of iron. No general, local, or toxic reactions were induced by repeated injections equivalent to 100 to 250 mg. of elemental iron to 15 patients with iron-deficiency anemia and to 50 women with anemia of pregnancy, report Dr. D. F. Cappell and associates of the University and Western Infirmary, Glasgow, and Drs. J. M. Scott and A. D. Telford Govan of Glasgow Royal Maternity and Women's Hospital, Scotland. Imferon appears to have hematinic effects equal to those of intravenous saccharated oxide of iron. Average hemoglobin regeneration rates of 3.5 to 11.3% hemoglobin per week are observed within the first month of therapy.

Brit. M. J. 4899:1255-1259, 1954.




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**each fluidounce contains:**

Iron peptonized ..... 420 mg.
(Equiv. in elemental iron to 70 mg.)
Manganese citrate, soluble ..... 158 mg.
Thiamine hydrochloride ..... 10 mg.
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Niacinamide ..... 50 mg.
Pyridoxine hydrochloride ..... 1 mg.
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Ferrous sulfate ..... 130 mg.
(Equiv. to 25 mg. of elemental iron)
Thiamine hydrochloride ..... 3 mg.
Riboflavin ..... 3 mg.
Niacinamide ..... 10 mg.
Vitamin $B_{12}$ ..... 5 mcg
Pyridoxine hydrochloride ..... 0.5 mg.
Calcium pantothenate ..... 2 mg.
Folic acid ..... 1 mg.
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## Inherited Hemolytic Disease

A recently recognized hemolytic disorder due to homozygous hemoglobin C may be the cause of unexplained anemia, arthralgia, and splenomegaly in Negroes. Inherited as a simple mendelian trait without sex linkage, the homozygous hemoglobin C produces a syndrome similar to thalassemia minor. Differential diagnosis depends upon electrophoretic recognition of the abnormal hemoglobin, declare Dr. Douglas W. Terry of Georgetown University, Washington, D. C., and associates. Characteristic peripheral blood findings include slight normochromic, normocytic, or microcytic anemia, target cells, occasional fragmented cells, and increased osmotic resistance of erythrocytes. Serum bilirubin may be elevated. Bone marrow biopsy shows normoblastic hyperplasia.

New England J. Med. 251:365-373, 1954.

## Effective Anticonvulsant

Petit mal and psychomotor seizures may be inhibited by the oral administration of *N*-methyl-α,α-methylphenylsuccinimide (PM 396). Although relatively more toxic than other succinimide anticonvulsants, PM 396 acts more rapidly and effectively, especially in the treatment of intractable patients, report Drs. Frederic T. Zimmerman and Bessie B. Burgemeister of Columbia University and the Neurological Institute, New York City. Of 54 patients with petit mal given 1 to 5 capsules of 1.1 gm. each daily, 22% had complete, 9% practical, and 29% partial control. In 15 patients with psychomotor seizures, control was complete in 20%, practical in 20%, and partial in 40%. Toxic manifestations include drug rash, periorbital hyperemia, dizziness, drowsiness, and vomiting.

Arch. Neurol. & Psychiat. 72:720-725, 1954.

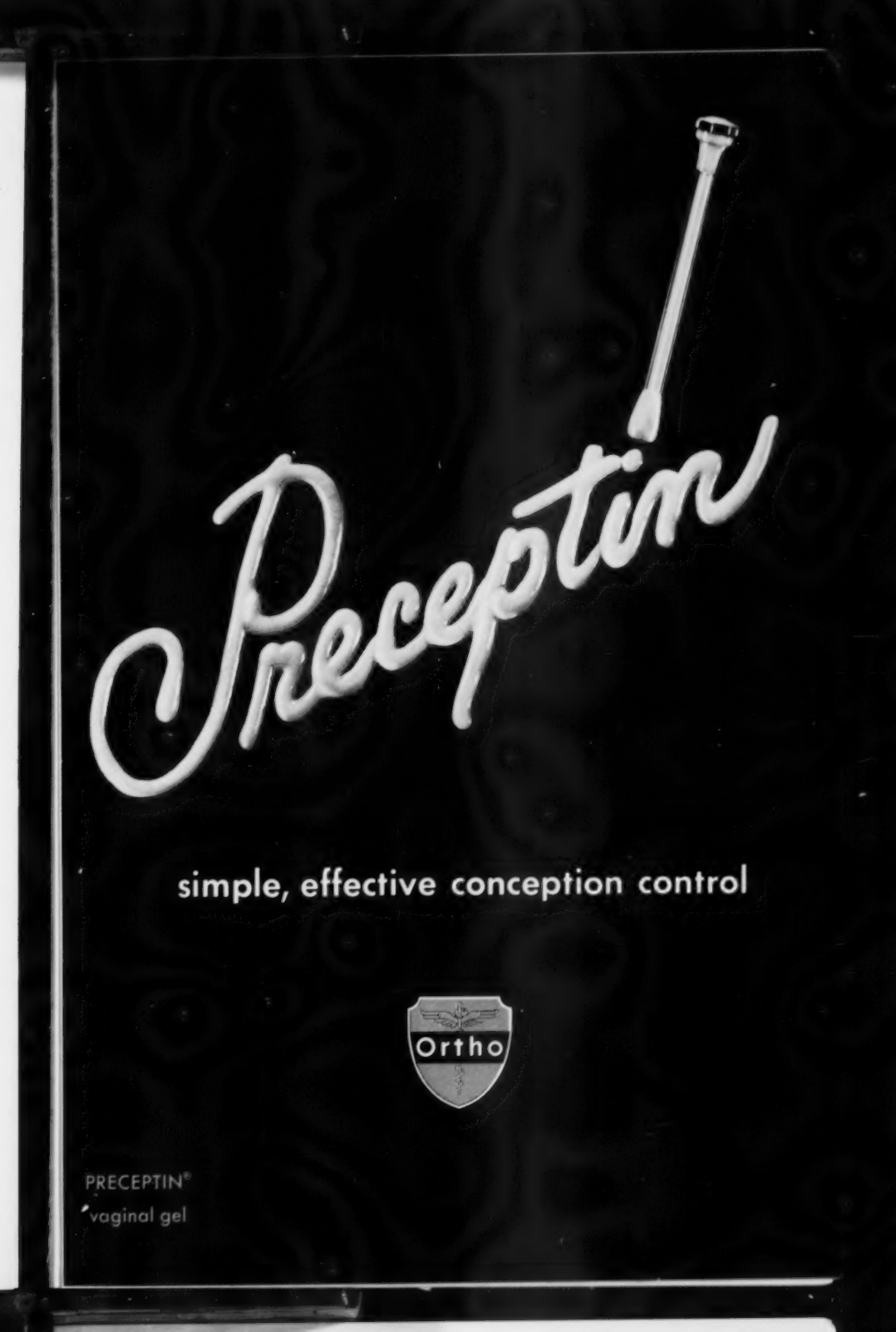
## Anticoagulant for Retinitis

Dicumarol therapy permanently improves visual acuity and enlarges peripheral fields of patients with retinitis pigmentosa. Among 37 patients with premature degeneration of the neuroepithelium, 33 showed rapid, permanent ocular improvement and only 3 had hemorrhagic tendencies due to Dicumarol injections, report Drs. Louis S. Leo and Bernard Lidman of Norfolk, Va. Large initial doses of 300 mg. daily are administered to prolong prothrombin time to about thirty-eight seconds; maintenance doses of 50 to 75 mg. daily are continued for six weeks.

Am. J. Ophth. 39:46-51, 1955.




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### Histoplasmosis Therapy

Localized lesions of histoplasmosis may be eradicated with 2-hydroxystilbamidine. Complete healing of an ulceration of the hard palate and gingiva in a patient given daily intravenous infusions of 150 mg. of the agent is reported by Drs. Robert F. Nejedly and Lyle A. Baker of the Veterans Administration Hospital, Hines, Ill. A total dose of 20 gm., administered over approximately four months, produced no toxic symptoms other than transient anorexia, nausea, and vomiting.

Arch. Int. Med. 95:37-40, 1955.

### Test of Rheumatoid Activity

Agglutination of sensitized sheep red blood cells by the euglobin fraction of serum affords a sensitive diagnostic indicator of rheumatoid arthritis. Separation of euglobin from other serum components partially removes an inhibitor of sheep-cell agglutinins, explain Dr. Morris Ziff and associates of New York University, New York City. Positive agglutinations with euglobin fractions were found in 92% of 83 patients with peripheral rheumatoid arthritis and in only 2% of 104 healthy individuals. In contrast, whole sera were positive in only 78% and false-positive in 13%. Positive reactions were also found in 6 of 12 patients with juvenile rheumatoid arthritis but in none of the individuals with adult rheumatoid spondylitis or arthritis with psoriasis.

Bull. Rheumat. Dis. 5:75-76, 1954.

### Prenatal Antibiotic Therapy

Effective doses of penicillin and other antibiotics can be transferred to unborn infants through the maternal circulation. When labor is unduly prolonged after rupture of membranes, prompt treatment may prevent fetal pneumonia and other infections as well as pelvic complications in the mother. Placental transmission of 1,000,000 units of penicillin, 1 gm. of streptomycin, or 500 mg. of chloramphenicol, Aureomycin, or Terramycin was demonstrated by Dr. David Charles of the Postgraduate Medical School of London, in 5 groups of 10 patients each. If labor continues for twenty-four hours after rupture, medication should be guided by high vaginal swabs.

J. Obst. & Gynaec. Brit. Emp. 61:750-757, 1954.

### Assay of Liver Function

Cholangiography may furnish accurate estimates of hepatic impairment in patients with moderate or severe liver damage. The concentration in the biliary tract and rate of excretion of the contrast material can be directly correlated with laboratory tests of liver function, report Dr. Eric Samuel and associates of the Lister Buildings, Johannesburg. However, no differences in concentration and excretion can be detected between patients with slight liver impairment, indicated by slightly raised thymol and gamma turbidities, and those with normal laboratory values.

Lancet 268:13-15, 1955.

## Chelates for Iron Deposits

Infusion of Versenol, an exchange resin, increases excretion of iron in patients with deranged iron metabolism. Intravenous administration of 1 gm. of Versenol acid in 40 cc. of saline promoted within four days more than a fourfold increase in urinary iron excretion in a patient with hemochromatosis and accelerated iron excretion to a lesser degree in an individual with abnormal iron storage, report Dr. Marvin J. Seven of the Philadelphia General Hospital and associates. The exchange resin effectively binds ferric iron to form a stable, excretable ferric chelate.

Am. J. M. Sc. 228:646-651, 1954.

## Therapy of Hyperthyroidism

Large doses of propylthiouracil may rapidly establish euthyroid states in patients with severe primary hyperthyroidism and relieve thyrocardiac complications in some individuals with adenomatous goiter. Daily doses of 600 to 1,000 mg. of propylthiouracil rapidly relieved symptoms, reduced pulse and metabolic rates, and permitted weight gain in all of 12 patients with the primary disease, report Drs. Elmer C. Bartels and Martin M. Kohn of the Lahey Clinic, Boston. The increased dosage was less effective for 12 persons with adenomatous goiters but was more beneficial than the smaller amounts usually prescribed. The large doses were of particular value for individuals physically depleted by thyrocardiac complications. Toxic reactions were observed in 2 of the 24 patients but did not require cessation of therapy.

J. Clin. Endocrinol. 14:1403-1411, 1954.


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Nitranitol R.S.
for direct vasodilation plus the added central hypotensive and calming actions of Rauwolfia serpentina
Mannitol hexanitrate . 32 mg.
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(alkaloidal fraction of Veratrum viride, standardized for hypotensive activity)

DOSAGE: In blood pressures over 200 systolic, 2 tablets four times daily. In other cases, 1 or 2 tablets every four to six hours. Bottles of 100 and 1,000.

NOTE: Nitranitol is exceptionally stable, assuring uniform potency, so important in medication for your hypertensives.

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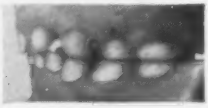
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## Regimen after Adrenalectomy

Oral administration of glycyrrhizin reduces the amount of cortisone necessary to maintain patients after total bilateral adrenalectomy. Divided daily doses of 4 gm. of ammoniated glycyrrhizin, U.S.P., containing 96 mg. of reducing sugar, 1.9 milliequivalents of sodium, and 5.9 milliequivalents of potassium, were introduced into the maintenance regimen after the lowest effective dose of cortisone had been established. Reduced doses of cortisone supplemented with glycyrrhizin provided adequate maintenance of all patients for periods of three to eight weeks. Complete withdrawal of cortisone was possible in 2 of 3 patients for eight and sixteen days, report Dr. Perry B. Hudson and associates of the Francis Delafield Hospital and Columbia University, New York City. The drug appears to be superior to desoxycorticosterone acetate in preventing adrenocortical insufficiency.

New England J. Med. 251:641-646, 1954

## Cardiology Meeting

The fourth annual meeting of the American College of Cardiology will be held May 18 to 20, 1955, at the Hotel Biltmore, New York City. Hypertensive heart disease, surgery, and the heart in sports will be discussed. Information on the program may be obtained from Dr. Philip Reichert, 140 West 57 St., New York City 19.

### Books Received

THE LABORATORY DIAGNOSIS OF CANCER OF THE PROSTATE. A symposium edited by F. Homburger and W. H. Fishman. 51 pp., ill. Tufts College Medical School. Distributed by Brown & Connolly, Boston. 1954.



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WHEAT MAKES

# Wheat Chex

a nutritionally superior
cereal...

one that you can recommend with confidence. (And...it's made by the makers of Ralston hot whole wheat cereal!)

Bite Size...Crisp...
Nutlike in flavor. People of all ages like Wheat Chex.





# Veratrite®

## SPECIFICALLY FOR THE HYPERTENSION THAT "COMES WITH AGE"

- **improves circulation**
- **induces a sense of well-being**
- **helps protect against cerebral accidents**

Veratrite is the drug of seasoned judgment in managing the hypertension that "comes with age." It is specific for the older hypertensive for whom potent hypotensive agents are contraindicated.

Veratrite improves circulation to vital organs, relieves headaches and dizziness, and induces a distinct sense of well-being without excessive euphoria.

Each Veratrite tabule contains:

Cryptenamine*.....40 C.S.R.† Units
(as tannate salts)
Sodium Nitrite.....1 gr.
Phenobarbital.....¼ gr.
(warning—may be habit forming)

* Ester alkaloids of Veratrum viride obtained by an exclusive Irwin-Neisler non-aqueous extraction process

† Carotid Sinus Reflex

Bottles of 100, 500 and 1000.

IRWIN, NEISLER & COMPANY • DECATUR, ILLINOIS • TORONTO 1, ONTARIO

## Ileostomy Club

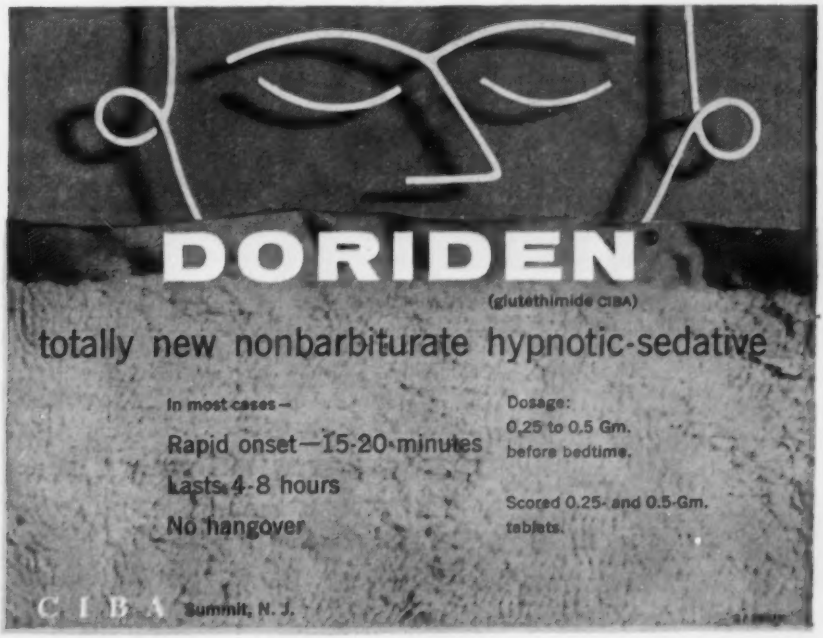
Organized self-help is an important tool in learning to live with a handicap. An organization started in Boston in October 1952 by 9 women with ileostomies had 48 members by the end of the first season and is still growing. Men and women all over New England are now served by monthly meetings, a bulletin, and exchange of practical and technical information. Members of the club make visits requested by physicians, hospitals, or social workers. Organizations have been formed in the Bronx Veterans Administration Hospital, in Philadelphia, and in Los Angeles. Information can be obtained from Mrs. Sylvia Kirshen, 73 Newport St., Arlington, Mass.

New England J. Med. 251:1008-1011, 1954.

## Antirheumatic Steroids

Metacortandralone and metacortandracine appear to have greater antirheumatic activity than cortisone without a proportionate increase in undesirable reactions. Given in initial daily doses of 30 to 60 mg. to patients with rheumatoid arthritis, Metacortalone produces consistent and rapid subjective and objective improvement in joint pain, swelling, warmth, and range of motion, report Dr. Joseph J. Bunim and associates of the National Institutes of Health, Bethesda, Md. Maintenance schedules of 5 to 25 mg. daily produce only minor side effects which are eliminated by a decrease in dosage. Symptoms return when therapy is stopped.

J.A.M.A. 157:311-318, 1955.



## *Our Office Nurse*

Think of a gag that fits the illustration. For every issue a new gag is published and the author is sent $5. The April 1 winner is

*Paul S. Metzger, M.D.*
*Berkeley, Calif.*

Mail your caption to
The Cartoon Editor
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No. 3

MODERN MEDICINE
84 South 10th St.
Minneapolis 3, Minn.



*"Just put down the patient's height and weight and leave out the details about last year's dress and outmoded hairdo."*


# Angina pectoris prevention



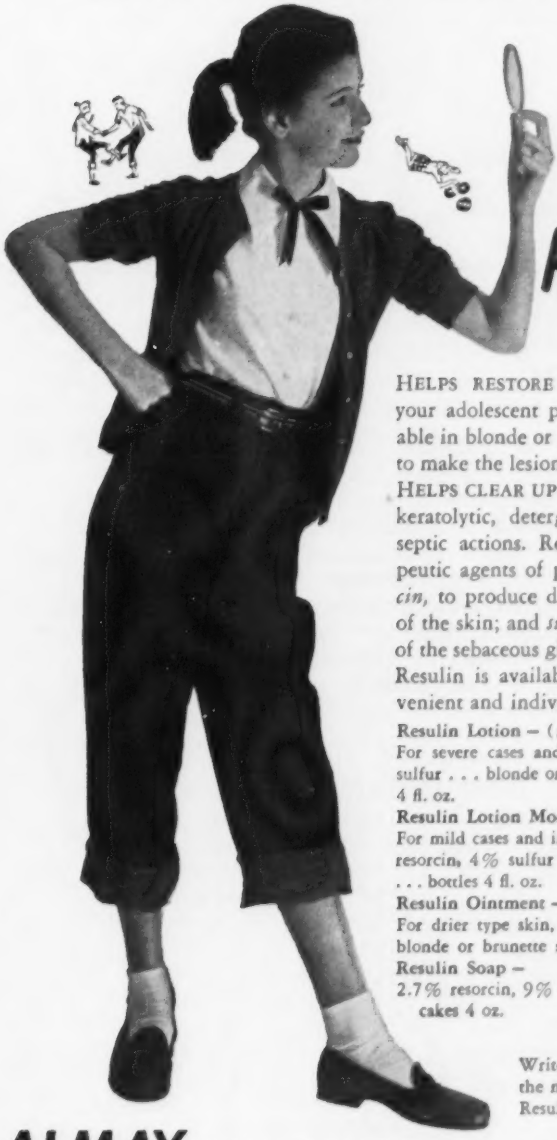

Most efficient of the new long-acting nitrates, METAMINE prevents angina attacks or greatly reduces their number and severity. Tolerance and methemoglobinemia have not been observed with METAMINE, nor have the common nitrate side effects such as headache or gastric irritation. Dose: 1 or 2 tablets after each meal and at bedtime. Also: METAMINE (2 mg.) with BUTABARBITAL (¼ gr.), bottles of 50. THOS. LEEMING & CO., INC., 155 EAST 44TH STREET, NEW YORK 17, N.Y.

**unique amino nitrate**

# Metamine.

triethanolamine trinitrate biphosphate, Leeming, tablets 2 mg. Bottles of 50 and 500

# "THIS LOTION SURE WORKS ON ACNE... AND YOU DON'T EVEN NOTICE IT!"



## RESULIN®

(Resorcin and Sulfur Compounds, Almay)

HELPS RESTORE SOCIAL CONFIDENCE to your adolescent patients because it is available in blonde or brunette, skin toned shades to make the lesions almost unnoticeable.

HELPS CLEAR UP ACNE by a combination of keratolytic, detergent, astringent and antiseptic actions. Resulin contains two therapeutic agents of proved effectiveness: *resorcin,* to produce drying and mild keratolysis of the skin; and *sulfur,* to inhibit the activity of the sebaceous glands.

Resulin is available in four forms for convenient and individualized therapy.

**Resulin Lotion** – (regular-full strength)
For severe cases and oily skin. 4% resorcin, 8% sulfur . . . blonde or brunette shades . . . bottles of 4 fl. oz.

**Resulin Lotion Modified** – (half-strength)
For mild cases and initial therapy on oily skin. 2% resorcin, 4% sulfur . . . blonde or brunette shades . . . bottles 4 fl. oz.

**Resulin Ointment** – (greaseless)
For drier type skin, 2% resorcin, 4% sulfur . . . blonde or brunette shades . . . tubes 1½ oz.

**Resulin Soap** –
2.7% resorcin, 9% sulfur, 2.7% salicylic acid . . . cakes 4 oz.

Write your name and address in the margin of this advertisement for Resulin samples and return to –

**ALMAY** division of Schieffelin & Co. • New York 3, N. Y.

# LATE REPORTS *from Medical Centers*

★ MEETING OF THE AMERICAN RHEUMATISM ASSOCIATION, Bethesda, Md.--In first trials, promising results have been obtained with the antirheumatic agents, metacortandralone and metacortandrosin. Potency is 2 to 4 times that of cortisone or hydrocortisone, report Dr. Joseph J. Bunim and associates, yet the usual side effects are avoided.

★ UNIVERSITY OF MELBOURNE, Australia—Death from barbiturate poisoning may be prevented by a combination of beta beta methyl ethyl glutarimide (NP13) and 2-4 diamino 5 phenyl thiazole, report Dr. F. H. Shaw and associates. The first agent counteracts barbiturates and stimulates breathing; the thiazole compound reinforces the action of NP13 and inhibits convulsions after large doses. The combination was effective in 20 patients with barbiturate poisoning.

★ U. S. FOOD AND DRUG ADMINISTRATION, Washington, D.C.—Drugs as close as 1,000 yd. from the site of atomic bombing will probably be safe for immediate use if the containers are intact. Nevada trials in 1953 employed ether, salt and sugar solutions, dextran, morphine, aspirin, nitroglycerin, digitalis, antibiotics, cortisone, thiopental sodium, and other compounds. Insulin and vitamin $B_{12}$ potency was reduced, and some drugs became slightly radioactive, though harmless in ordinary dosage. Products high in sodium were overactive for several days.

★ UNIVERSITY OF CALIFORNIA AT LOS ANGELES—An essential vitamin-like nutrient related to lactic acid was recently discovered by Dr. Max Dunn and Merril N. Camien. Natural sources are animal fats such as cream, butter, and lanolin. The factor is necessary to some microorganisms and perhaps to higher species.

★ NATIONAL CHEMICAL RESEARCH LABORATORY, Teddington, England—A drug related to salicylic acid is more effective than aspirin for pain and fever and is less toxic. Dr. S. E. Hunt and colleagues, in association with Dr. G. B. Chesher and associates of Allen and Hanburys, Ltd., report that the compound, 4-hydroxyisophthalic acid, was discovered in residues from manufacture of salicylic acid. Effects have been observed in rabbits and rats, and human trials are in progress.

★ JOHNS HOPKINS UNIVERSITY, Baltimore—Poliomyelitis tends to paralyze muscles injured before infection, apparently because of reflex alterations of circulation in brain and cord tissues that control the damaged structures. Dr. David Bodian localized paralysis in monkeys by injecting nonviral substances as early as two weeks before intravenous administration of poliomyelitis virus.

★ UNIVERSITY OF PITTSBURGH—Evaluation of poliomyelitis vaccine is facilitated by a procedure which detects poliomyelitis virus. Drs. Jonas E. Salk and J. S. Youngner put phenol red in culture tubes containing monkey kidney. Live cells give off acid and change the color to yellow. However, if poliomyelitis virus is added, the cells die and hue is unaffected. Although tests may require a week, hundreds can be done at once and microscopic examination of tissues is unnecessary. Antibody levels can also be determined.

NOW...
BETTER RESULTS IN ORAL SULFONAMIDE THERAPY WITH ONLY *TWICE-A-DAY* DOSAGE

EXCLUSIVELY WITH...

**Lipo-Triazine***
brand of meth-dia-mer sulfonamides

**Lipo-Diazine***
brand of sulfadiazine

*WRITE FOR LITERATURE AND SAMPLES*
*T.M., Patents Pending
DONLEY-EVANS & COMPANY
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*For acidosis due to anesthesia—edema*




**KALAK**
***Counter-Acts***
**ANTI-BIOTIC REACTIONS**

. . . . KALAK is a non-laxative, alkaline diuretic buffer — side reactions from aureomycin—terramycin—sulfas—penicillin are reduced through the use of KALAK—KALAK contains only those salts *NORMALLY* present in plasma. . . . IT IS BASIC!

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**of NEW YORK, Inc.**
**90 West St., New York 6, N. Y.**
*For acidosis due to nausea—in nephritis*

# BASIC SCIENCE *Briefs*

## Induced Cerebral Lesions

Lateral infarcts of cerebral hemispheres may be induced in dogs by injections of red vinyl acetate into the internal carotid arteries. The technic may provide laboratory animal evaluation of cerebral lesion therapy. Cerebral infarction limited to the hemisphere on the injection side developed in 17 of 25 animals studied by Dr. Jack P. Whisnant and associates of the Mayo Foundation, Rochester, Minn. Reliable lateralizing signs of contralateral hemiparesis and circling movements were observed in 15 animals.

Proc. Staff Meet., Mayo Clin. 29:613-617, 1954.

## Metal Clip Anastomoses

Blood flow may be rapidly reestablished in dogs undergoing arteriotomy and aortic anastomosis by use of stainless-steel clips to reunite vessel segments. After blood flow is resumed, interrupted sutures may be placed at leisure between the clips to reinforce the anastomosis, explains Dr. Peter B. Samuels of McGill University, Montreal. At each end of the specially designed V-shaped clip is a circle of spikes which grip the vessel wall and effect coaptation when compressed. Advantages of clip anastomoses are rapidity of union and intima-to-intima approximation without interluminal obtrusions.

Arch. Surg. 70:29-38, 1955.

a Brighter Prognosis for your

# HERPES ZOSTER PATIENTS

when you use

# PROTAMIDE®

(Sherman)

**because published studies* show:**

*"Good to excellent results" in more than 80%, with "almost immediate improvement."*

*Prompt recovery in more than 90% when Protamide is started in the first week of symptoms.*

## *Why not use Protamide first?*

. . . for herpes zoster, post-infection neuritis, chickenpox, and other nerve root pain such as tabes dorsalis.

A sterile colloidal solution prepared from animal gastric mucosa . . . denatured to eliminate protein reaction . . . completely safe and virtually painless by intramuscular injection.

**CLINICAL DATA ON REQUEST**

*Combes, F. C. & Canizares, O.: New York St. J. Med. 52:706, 1952; Marsh, W. C.: U. S. Armed Forces M. J. 1:1045, 1950.

**SHERMAN LABORATORIES**

BIOLOGICALS • PHARMACEUTICALS

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## Pituitary Tumor Induction

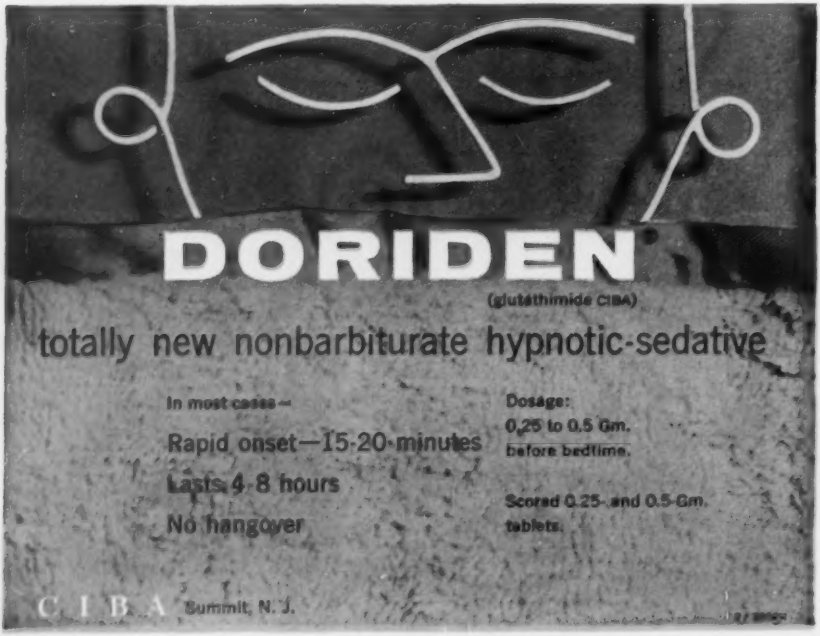
A sustained deficiency of thyroid hormone after total or subtotal thyroidectomy or radiothyroidectomy induces thyrotropic pituitary tumors in most strains of mice. Tumorigenesis is due to compensatory hyperplasia of pituitary cells which secrete thyroid-stimulating hormone, explain Dr. Jacob Furth and associates of the Children's Cancer Research Foundation, Boston, and Oak Ridge National Laboratory, Oak Ridge, Tenn. The induced tumors are hormonally dependent and transplantable only into hypothyroid animals. Repeated subpassage of the tumors, however, produces autonomous variants capable of growth in healthy mice. Secretion of thyroid-stimulating hormone from autonomous pituitary tumors induces formation of thyroid adenomas in tumor-bearing animals.

J. Clin. Endocrinol. 15:81-96, 1955.

## Cholesterolemia Inhibitor

Plant sterols interfere with the absorption of cholesterol in rats. The amount of $C^{14}$-labeled cholesterol recovered from cannulated thoracic ducts is significantly reduced in animals fed large or small amounts of cholesterol combined with mixed soy sterols, report Drs. H. H. Hernandez and I. L. Chaikoff of the University of California, Berkeley. Amount of esterified cholesterol in thoracic lymph is not altered.

Proc. Soc. Exper. Biol. & Med. 87:541-544, 1954.



**. . . no two hypertensives are alike**



**Harry Webster does much better on Rauvera**
*Diagnosis: Hypertension Grade II.*

H. W., lawyer, 60, was on Veratrum alkaloids (alkavervir) 20 mg. a day for 12 months. Average blood pressure 160/110, pulse rate 70. Vomited once weekly. On Rauvera (3 mg. biologically standardized Veratrum viride fraction—alkavervir—plus 1 mg. purified Rauwolfia alkaloids—alseroxylon fraction—per tablet) 2 tablets a day, in divided doses, for six months, blood pressure dropped to average of 140/95, pulse rate 65. Vomiting reduced to once every 2 months—no postural hypotension. ***Combination therapy*** of alkavervir plus alseroxylon proved clinically superior, with reduced side effects.

Rauvera® is a DORSEY preparation. Supplied in bottles of 100, 500, and 1,000 tablets.

Smith-Dorsey • Lincoln, Nebraska • A Division of The Wander Company

**H. W. does much better on Rauvera . . . for no two hypertensives are alike.**



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Clinical tests confirm the use of AR-EX Cosmetics for hyper-sensitive skins. Scented or Unscented. Send for Free Formulary.

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Each 100 cc. contains:

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| SULFADIAZINE (Microcrystalline) | 3.381 Gm. |
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In a palatable, stable emulsion pleasantly flavored with True Raspberry Flavor.

Each average teaspoonful (80 min.) represents .5 Gm. (7.7 grs.) of these 3 combined sulfa drugs in suspension.

Also available in tablet form as TRI-AZO-TABS each containing .5 Gm. (7.7 grs.) of the above three combined sulfa drugs.

Triple Sulfas (Meth-Dia-Mer Sulfonamides) remain unsurpassed among sulfa drugs for Highest potency. Wide Spectrum . Highest blood levels . Safety . Minimal side effects.

Supplied in pint bottles only.
Tablets in bottles of 100, 500, 1000.

FIRST TEXAS CHEMICAL MFG. CO.
Dallas, Texas Atlanta, Ga.


## Bilirubin Encephalopathy

Pigment deposits are found in the brains of newborn rats injected intraperitoneally with bilirubin solutions. Staining of the rat brain resembles encephalopathy in newborn children with hemolytic diseases and hyperbilirubinemia, report Drs. William J. Waters and Howard A. Britton of the State University Medical Center, Syracuse, N. Y. Bilirubin injection of adult animals does not induce encephalopathy, suggesting a relationship between the blood-brain barrier and immaturity.

Pediatrics 15:45-48, 1955.

## Antihemorrhagic Extracts

A substance found in the mammalian spleen prevents postirradiation hemorrhage in dogs. Extracts of beef spleen yield high concentrations of an accelerator of tissue clot retraction (TCRA) which neutralizes, both in vivo and in vitro, an inhibitor of clot retraction time found in the blood of irradiated animals, reports Dr. J. Philip Savitsky of the May Institute, Cincinnati. The thrombocytopenia and clotting time defect of irradiated animals are unchanged by splenic extract administration.

Blood 10:52-61, 1955.



**. . . no two hypertensives are alike**



**Paul Picard is much improved with Rautensin**
*Diagnosis: Hypertension Grade II.*

P. P., plant foreman, 33. On parenteral hexamethonium 100 mg., and hydralazine 200 mg. a day for 12 months. Reduction of blood pressure (160/120) and pulse rate (80) not too satisfactory. Postural dizziness, constipation and fatigue were main complaints. Regimen was changed to parenteral hexamethonium 100 mg. plus Rautensin 2 tablets a day. (Each Rautensin tablet contains 2 mg. of purified Rauwolfia alkaloids—alseroxylon fraction.) As a result, blood pressure averages were reduced to 150/100, pulse rate to 70. Postural dizziness, constipation and fatigue were completely alleviated.

Rautensin* is a DORSEY preparation. Supplied in bottles of 100, 500, and 1,000 tablets.

Smith-Dorsey • Lincoln, Nebraska • A Division of The Wander Company

*TRADE MARK

**P. P. is improved with Rautensin . . . for no two hypertensives are alike.**




*"I'm sure that thermometer must be in here some place!"*

VI-MAGNA*
Multivitamins

CAPSULES
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VI-MAGNA Capsules: sealed, dry filled, easy to swallow. Contain *all* essential vitamins, including Folic Acid and $B_{12}$.

VI-MAGNA Syrup: orange-lemon flavor (no "fishy" taste or odor), can be mixed with fruit juice, milk, or infant formula. Contains nine essential vitamins, including $B_{12}$.

VI-MAGNA Granules: orange-flavored (no "fishy" taste or odor), readily dissolved in liquid or mixed with solid food. *All* essential vitamins, including Folic Acid and $B_{12}$.

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**Eleanor Bradley is "a different woman" on Crystoserpine**
*Diagnosis: Hypertension Grade I, labile.*

E. B., department store buyer, 46. Previously on barbiturates: This was unsatisfactory because of "hangover" and inconsistent blood pressure reductions. Later put on Crystoserpine (crystalline reserpine) 1 tablet 0.25 mg. per day. This resulted in gradual but steady reduction of blood pressure 40 to 45 points below the level achieved with barbiturates. Pulse rate similarly reduced by 10 beats. Anxiety and headaches have decreased, she sleeps more soundly. When fatigued on awakening, an extra cup of coffee quickly relieves this side effect.

Crystoserpine* is a DORSEY preparation. Supplied in bottles of 100, 500, and 1,000 tablets.

Smith-Dorsey • Lincoln, Nebraska • A Division of The Wander Company

*TRADE MARK

**E. B. does better on Crystoserpine . . . for no two hypertensives are alike.**

### Metabolism of Lidocaine

The superiority of lidocaine over procaine as a local anesthetic may be partially explained by differences in absorption and disposal. Studies in the rat, reported by Drs. Chen-Yu Sung and Aldo P. Truant of Tufts Medical School, Boston, reveal rapid absorption of procaine from the injection site and an accelerated rate of metabolism to account for the relatively short period of anesthetic action. In contrast, intramuscular lidocaine has a slower rate of absorption and causes prolonged anesthesia. The agent is recovered in kidneys, lung, spleen, fat, heart, and brain and is metabolized chiefly by the liver.

J. Pharmacol. & Exper. Therap. 112:432-443, 1954.

### Arterial Segment Prosthesis

Tubes made of Vinyon-N cloth are suitable vascular substitutes for bridging arterial defects in dogs. Initial bleeding through the interstices of the cloth stops completely after ten to forty seconds and fibrous exudate is observed within three to five days, followed by organization and ingrowth of fibrous tisue and endothelium, report Dr. George J. D'Angelo and associates of Duke University, Durham, N. C. Patency of the lumen was demonstrated by aortograms and femoral pulses in 22 of 30 dogs, some living up to three hundred days after operation. Failures were due to separation of sutures, dilatation, or thrombotic occlusion.

Arch. Surg. 70:39-44, 1955.





Deep, Active Hyperemia...

Potent Analgesia

for **MUSCULO-SKELETAL PAIN**

**ARTHRALGEN**®

**VASODILATION**—Shown to dilate both arterioles and capillaries, via powerful methacholine chloride—to increase circulation, hasten recovery.

**ANALGESIA**—High methyl salicylate content for fast, prolonged pain relief.

**RUBEFACTION**—A glowing sense of comforting warmth via menthol and thymol.

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**Upjohn**

# Ulcer protection that lasts all night:

# Pamine tablets

*Bromide*

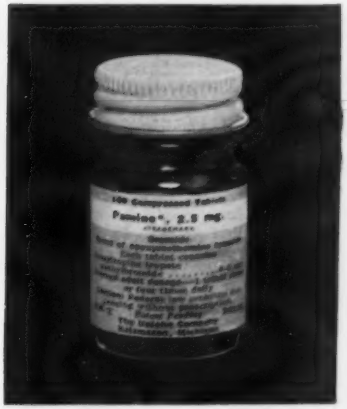
REGISTERED TRADEMARK FOR THE UPJOHN BRAND OF METHSCOPOLAMINE

*Each tablet contains:*
Methscopolamine bromide
2.5 mg.

*Average dosage (ulcer):*
One tablet one-half hour before meals, and 1 to 2 tablets at bedtime.

*Supplied:*
Bottles of 100 and 500 tablets.

The Upjohn Company, Kalamazoo, Michigan



### Antituberculous Compound

A recently synthesized thioethyl compound, S-ethyl-L-cysteine, is active against experimental tuberculosis in mice. When incorporated into the diet of infected mice, the antituberculous activity of the compound was greater than that of para-aminosalicylic acid and pyrazinamide but less than that of streptomycin or isoniazid, report Dr. Morris Solotorovsky and associates of Rahway, N.J. Activity of the compound is low when given by subcutaneous injections. The drug is of particular value against tubercle bacilli resistant to dihydrostreptomycin, para-aminosalicylic acid, or isoniazid. The compound has no in vitro activity.

Am. Rev. Tuberc. 70:806-811, 1954.

### Prevention of Fatty Liver

Adrenal hormones appear to be beneficial in liver disease. Rats given choline-deficient diets have severe fatty infiltration of the liver within a week. If crystalline cortisone in aqueous suspension is started with the diet, however, a dosage of 2 mg. daily will prevent and 1 mg. will reduce fatty degeneration, report Dr. Herbert S. Kupperman and associates of New York City. Treatment begun after one week of the diet does not greatly alter fat content but improves liver architecture. Lipoadrenal cortex, an oil solution of an amorphous fraction containing 11-oxygenated steroids, is considerably less effective than equivalent doses of cortisone.

Metabolism 4:50-60, 1955.

*When milk is Contraindicated* Gerber's Meat Base Formula provides adequate replacement. Closely approximating milk nutritionally, it is well tolerated even by the newborn and gains immediate acceptance by older babies . . . no trouble in changing from milk to meat. An authoritative study* demonstrated no weight loss or anemia in babies receiving meat base formulas. May also be used as a reliable diagnostic method for suspected milk-allergy—just completely replace milk with Gerber's MBF for 48 to 96 hours. Diagnosis would be confirmed by symptomatic improvement. Available through druggists. 14 fl. oz. can . . . 60¢.




GERBER PRODUCTS COMPANY, FREMONT, MICHIGAN

*Rowe, Albert, Jr. and Rowe, Albert H.: Cal. Med. 81:279 (Oct.) 1954

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Safe, Orally Effective Antimycotic

**for Diarrhea**
**Perianal Itching**
of Intestinal Moniliasis

**Usual Dose:** 2-4 capsules q.i.d.

## ℞ CAPRYLIUM™

Moniliacidal, Trichomonacidal, Bactericidal

**Rapid specific action in**
**Vaginitis**

**For Cleansing or Douche:** Douche Powder (dissolved in water)
**For Deposit:** Vaginal Creme or Vaginal Tablets

## ℞ STRASCOGESIC™

**Quick, High Level Analgesia**
in Routine PAIN Problems

**Usual Dose:** 1 to 2 tablets every 3 hours

## ℞ SKOPOLATE™

Parasympatholytic—
Antacid—Mucigogue

**in Peptic Ulcer and Functional Gastroenteralgia**

**Usual Dose:**
2 mg. tablets—1 t.i.d. ½ hr. a.c.
P.A.M. capsules—1 t.i.d. 2 hr. p.c.
D.A. tablets—1 h.s.

## ℞ BIPHETACEL®

Particularly safe and effective in establishing and maintaining
**Weight Reducing Habits**

**Usual Dose:** 1 tablet t.i.d. 1 hr. a.c.

## ℞ MAXITATE®

WITH **RAUWOLFIA** COMPOUND

**Hypotensive**
**Tranquilizing**
**Protective**
in mild to severe
**Hypertension**

**Usual Dose:** 1 tablet q.i.d.

Strasenburgh
FOUNDED 1886
LABORATORIES
R.J. Strasenburgh Co., Rochester, N.Y., U.S.A.
*Write for literature*

### Poliomyelitis Susceptibility

Natural seasonal changes and experimental interruption of adrenotesticular equilibrium are correlated with susceptibility of hamsters to intracerebral inoculations of poliomyelitis virus. Increased morbidity and mortality to the injected virus coincide with seasonal enlargement of adrenals and also result from cortisone and desoxycorticosterone acetate therapy or compensatory enlargement of adrenals after orchiectomy, report Drs. Constantin V. Teodoru and Gregory Shwartzman of Mount Sinai Hospital, New York City. Conversely, resistance to infection is observed during seasonal diminution in adrenal weight and following adrenalectomy, testosterone overdosage, or testicular hypertrophy that is produced by a gonadotrophic hormone or by injections of chorionic gonadotrophin.

J. Exper. Med. 100:563-574, 1954.

### Antiviral Synthetic

Polyvinylamine, a synthetic basic polyelectrolyte, possesses a virus inhibitory activity. Drs. Maurice Green and Mark A. Stahmann of the University of Wisconsin, Madison, find that a polypeptide backbone is not essential for antiviral activity since the polyelectrolyte inhibits influenza B, Newcastle, and mumps virus grown in chick embryos.

Proc. Soc. Exper. Biol. & Med. 87:507-509, 1954.

up against this stubborn trio?

nervous tension
associated pain
smooth muscle spasm

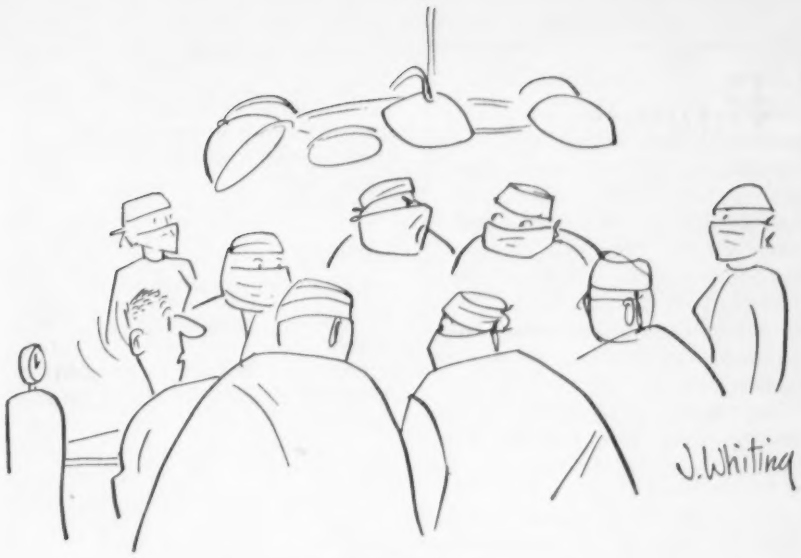


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BY THE CONCERTED ACTION of the natural alkaloids of belladonna and the mild, antispasmodic effect of CLORTRAN, BUTADONNA provides at once spasmolysis, sedation and a local anesthetic effect on the gastrointestinal mucosa. The belladonna alkaloids, asserts W. T. Salter,* "have withstood the 'acid test' of medical experience over the centuries." Combined with these in management of hypermotility and spasm, an exceptionally rational choice is CLORTRAN — non-barbiturate sedative without side effects, which allays excitement centrally and eases pain peripherally.

*Textbook of Pharmacology, (Saunders) 1952.

Wampole LABORATORIES




*"Butterfingers!"*

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*INDICATIONS: hypertonic and spastic states of gastrointestinal, genitourinary and biliary tracts, especially when nervous tension is present. Also in dysmenorrhea, functional nausea, vomiting and motion sickness.*

*EACH* **BUTADONNA** *CAPSULE CONTAINS:*

| | |
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| *Clortran (Chlorobutanol)* | *0.25 gm. (3-3/4 gr.)* |
| *Hyoscyamine Sulfate* | *0.1 mg.* |
| *Atropine Sulfate* | *0.02 mg.* |
| *Hyoscine Hydrobromide* | *0.007 mg.* |
| *Total Alkaloidal salts* | *0.127 mg. (1/500 gr.)* |

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**.... NEW SPASMOLYTIC-SEDATIVE .....**

*DOSAGE: One capsule three times a day, half hour before meals. As a night time spasmolytic-sedative, two or more capsules at bedtime.*
*SUPPLIED: Bottles of 100.*

*samples and literature on request!*

**Sedative-Hypnotic - Antinauseant**

**clortran**

**free of**
- residual symptoms of the barbiturates,
- gastric irritation caused by other chloral derivatives

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# Patients . . . I have met

● *The editors will pay $1 for each story published. No contributions will be returned. Send your experiences to the Patients I Have Met Editor, MODERN MEDICINE, 84 South Tenth St., Minneapolis 3, Minn.*

*The more patient pedestrians, the less pedestrian patients.—E.K.*

### *Supermarket*

The husband of a maternity patient brought his son to the hospital to see the new additions to the family, triplets. "Let's take the one in the middle," said the 6-year-old.—E.K.

### *Practical Patient*

"Sir, your case will probably enrich medical science," I said to a patient with a disorder I could not diagnose.

"I thought it would only cost $5 or $10," he replied.

### *Grumpy*

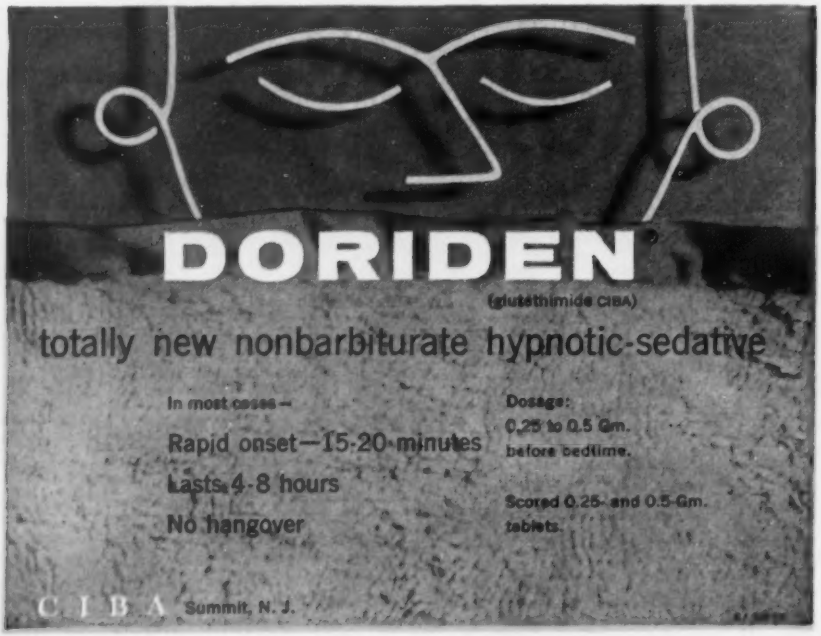
"Your color is better today, and you are breathing easier," I remarked to an elderly patient who complained continuously.

"I'm glad that I'm going to die in good condition," he retorted.—W.J.B.

### *A Flirt Affronted*

"It would be wonderful to be nursed by you," said the new intern at the hospital where I'm a nurse.

"It would be more than wonderful," I replied. "It would be a miracle. I'm in the maternity ward."—B.P.S.




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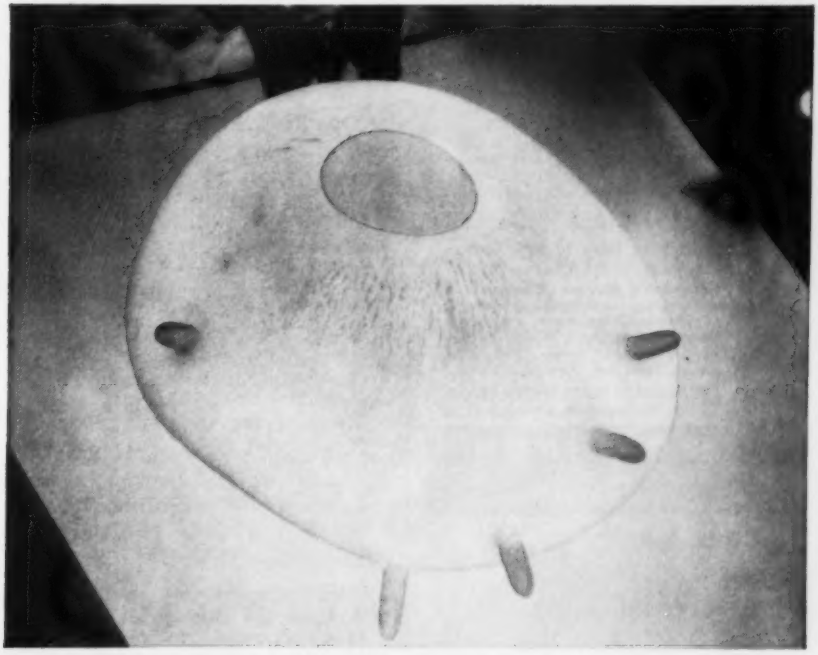

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### *Riddle*

Why reeks the goat
On yonder hill
Who seems to dote
On chlorophyll?—E.K.

### *Enlightening Experience*

"Doesn't the baby brighten your home?" I asked the man who just became a father.

"I'll say so," he replied, "we have the lights on all night."—W.L.H.

### *Audacious Attorney*

"How is Jones, the lawyer, doing, Doc?" asked my barber.

"He's lying at death's door," I answered.

"That's nerve for you; at death's door and still lying," said the barber.—E.S.

### *Plagiarism*

"Don't you like your new baby sister?" I asked a patient's little boy.

"She's all right," the youngster replied, "but I wish she had been a boy. Willie Smith has a new sister, and now he'll think I'm copying him."—K.L.



*"I wouldn't worry too much about it yet. There's always the possibility that my stethoscope's broken."*

# Diamox*

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1. MERLIS, S.: Diamox: A Carbonic Anhydrase Inhibitor—Its Use in Epilepsy. Neurology. 4:11, 863-866 November 1954.

2. BECKER, B.: Decrease in Intraocular Pressure in Man by a Carbonic Anhydrase Inhibitor, Diamox. Am. J. Ophth. 37:1, 13-15 January 1954.


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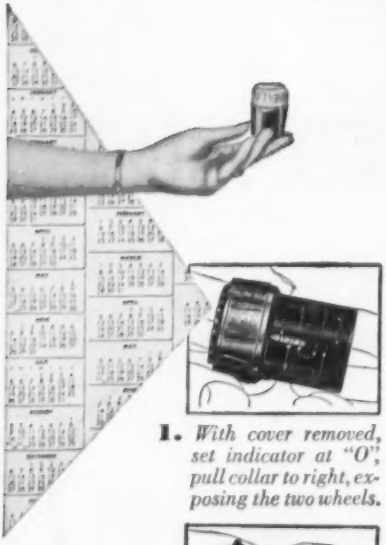
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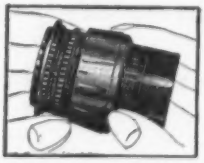
**Studies show** that involved calculations are the greatest single source of error in applying the Knaus method. These are now avoided.

The ADAMS Fertility Calculator is made of durable plastic and metal and is only 2 inches high. The calculator will be sold only through Surgical Supply Dealers on recommendation of physicians. Price is $5.00 with quantity discounts.

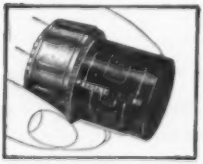
**3 Simple Steps**



**1.** *With cover removed, set indicator at "O", pull collar to right, exposing the two wheels.*



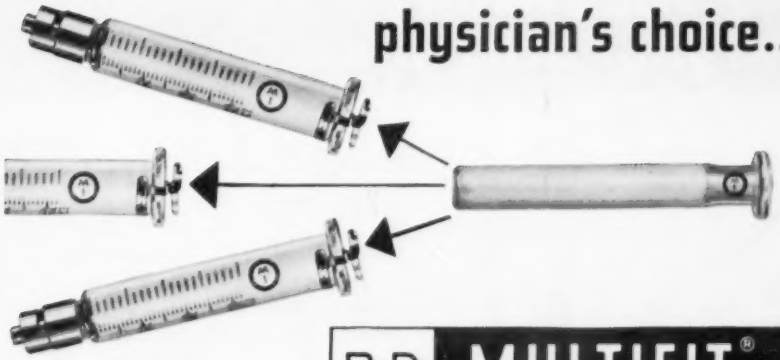
**2.** *Shortest and longest cycles are set opposite each other — relock calculator by sliding collar back in place, with line over individual cycle variations.*



**3.** *Fertile period is read directly when indicator is set at date of menstrual onset.*

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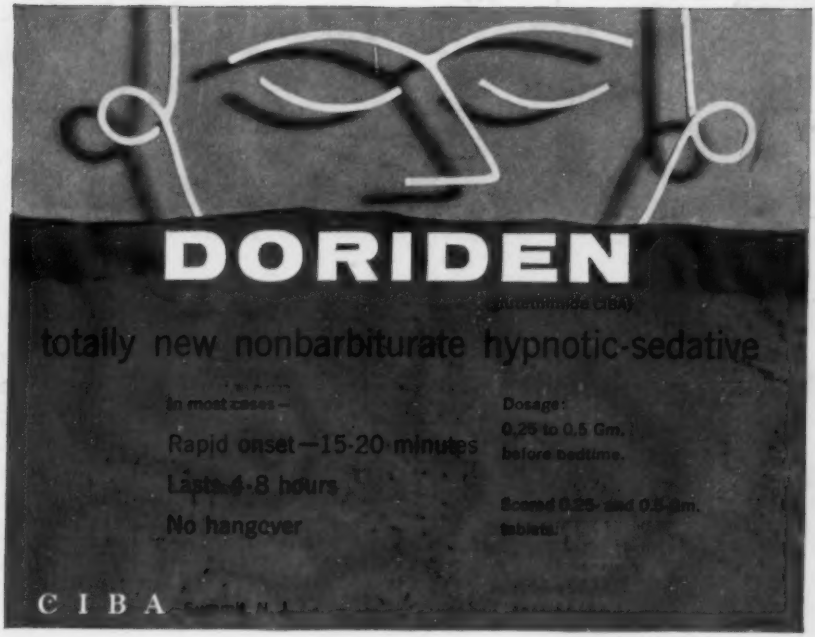
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